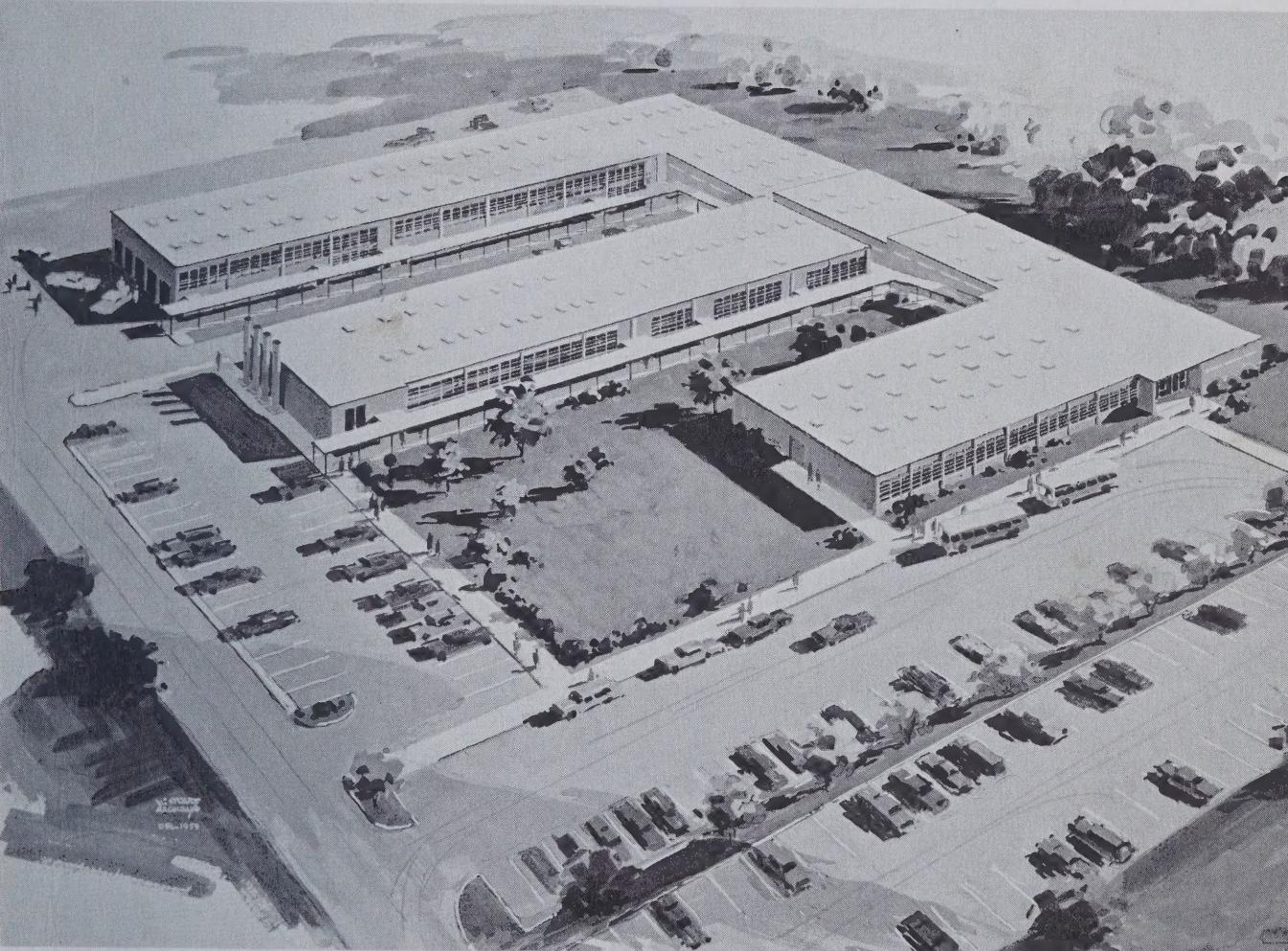


Forsyth Technical Institute



**GENERAL CATALOG
1966 - 1969**

SUPPLEMENT TO THE CURRENT CATALOG OF

Forsyth Technical Institute

Name of School

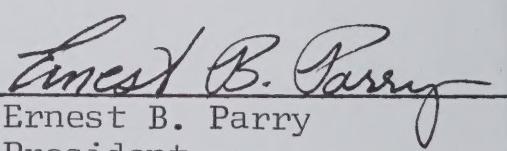
2100 Link Road, Winston-Salem, N. C.

Address

The contact hours shown in the catalog are minimal. It is a policy of this institution to permit students to enroll in additional subjects and laboratory work beyond those shown in the catalog in order to broaden their training.

When in any quarter the total weekly contact hours listed are fewer than twenty-five hours in a technical curriculum and fewer than thirty hours in a vocational trade curriculum, a student may enroll on request and with the approval of the institution for additional instructional hours to make up twenty-five hours per week in a technical curriculum or sufficient hours of attendance to make up thirty hours per week in a vocational trade curriculum.

Signed


Ernest B. Parry

Title President

Date March 20, 1967

**GENERAL CATALOG
1966 - 1969**

**2100 Link Road
Winston-Salem, North Carolina 27103**



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BOARD OF TRUSTEES

Appointed By City/County School Board

	Expiration of Term
Dallas F. Chappell	1967
Boyd Idol	1969
Conrad Forbes	1971
Mrs. G. G. Young	1973

Appointed by County Commissioners

W. O. Barrett	1967
Mrs. Herman (Bess) Warren	1969
G. S. Coltrane	1971
H. F. Snyder (Chairman)	1973

Appointed by Governor

Claude Frederick	1967
C. C. Lassiter	1969
Claude Hamrick	1971
Marvin J. Mulhern	1973

ADMINISTRATIVE OFFICERS

Ernest B. Parry	President
*William M. Bowers	Director of Trade and Technical Education
T. Glen Fleeman	Director of Adult Education
Ray C. Cates	Business Manager
Bobby Camp Thompson	Director of Student Personnel

*Resigned 1966

FACULTY

Aycock, Sally B. (1964) English, Sociology

B.A. 1950 (Agnes Scott College); M.A. 1953 (Furman University); Counselor, five years, Greenville (S. C.), General Hospital; Director of Admissions and Student Activities, Watts Hospital, Durham, N. C.; Assistant Dean of Women, Instructor in Psychology, one year, Anderson (S. C.) Junior College.

Basham, John C. (1964) Division Chairman, Manufacturing Engineering Technology

B.S. 1957 (University of Tennessee), 1965—further graduate study (University of North Carolina at Greensboro); Engineering courses at Western Electric; Graduate Engineering Training Center, Winston-Salem, N. C. Ten years experience in industry: Production Control, Sperry-Farragut Corp.; Project and Wage Incentive Engineer, Western Electric Co.; Communications Analyst, U. S. Air Force.

Blake, O. M. (1965) Assistant Director for Extension

B.A. (Wake Forest College); M. Ed. (University of North Carolina at Greensboro). Experience: English teacher, Denton, N. C. High School; National Advertising Representative, Winston-Salem, N. C., Journal and Sentinel; Sales Training and Public Relations Director, Sealtest Foods, Inc.

Blevins, Rachel (1966) Assistant Bookkeeper

Attended Colevenger's Business College, Five years experience in industry.

Boger, W. L. (1965) Welding

Undergraduate study Wake Forest College, North Carolina State University, University of North Carolina at Greensboro; Western Electric Wenoca School; Graduate in Metallurgy, Metals Engineering Institute, Metal Parks, Ohio; certified for precision aircraft and missile welding (Military Specification T5021). Industrial experience, 13 years: Metal Fabricator and Machinist, Production and Welding Lay-out.

***Bowers, William M.** (1963) Director of Trade and Technical Education

B.S. 1950 (State University College at Oswego, N. Y.); M.A. 1951 (University of Florida); Further graduate study: The American University, University of Buffalo. Advanced graduate study: Colorado State College. Experience: Six years public school teaching, six years college teaching.

*Resigned 1966

Bright, Frank K. (1965) Diesel Truck Maintenance and Repair

1955 Associate of Applied Science (Morehead City Technical Institute); Further training Forsyth Technical Institute, Mack Service School, Transportation Refrigeration School. Experience in industry, thirteen years: Modern Automotive Service (Diesel), Carolina Garage (Mack Truck Sales); ten years garage owner-manager.

Byars, Alcie O. (1966) Executive Secretarial Science

B.S. 1953 (Winthrop College). Four years experience at Employment Security Commission, Five years experience as Accounting Clerk, and Stenographic Clerk, One year teaching experience.

Cates, Ray C. (1962) Business Manager

B.S. 1949 (North Carolina State University) M.Ed. 1955 (University of North Carolina). Twelve years experience in purchasing, maintenance and inventory. Sergeant Major, Office of the Director of Training, Camp Lee, Va., W.W.II.

Chadwick, H. Leslie (1963) Mathematics

A.B. 1941 (East Carolina College), M.A. 1949 (East Carolina College); further graduate study George Peabody College, Duke University. Fourteen years experience school administration and teaching. Six years experience in business management.

Cone, John D. (1966) Architectural Drafting

B.S. 1932, Massachusetts State College, B.F.A. 1935, Yale University. Thirty years experience in drafting, Two years teaching experience.

Corey, Grace Brewer (1963) Physics, Chemistry

B.S. 1947 (University of North Carolina at Greensboro); M.Ed. in progress (University of North Carolina at Greensboro). Ten years teaching experience. Experience in industry three years: North Carolina Dairy Council.

Dalton, JoAnn (1966) Practical Nursing

One year at University of North Carolina at Greensboro, Diploma in Nursing, City Memorial Hospital School of Nursing. Eight years teaching experience.

Darden, Jean L. (1966) Practical Nursing

R.N. 1959 (Watts Hospital, Durham, N. C.). Experience: Surgical Nursing one year, Pediatric Nursing three years, Clinical Instructor five months.

Elkins, Zona J. (1966) Business Administration

A.B. 1963 (Catawba College), M.S. 1966 (Syracuse University). One year experience at Merchant's National Bank, One year experience at S.C.M. Corporation, One year experience at Kennametal, Inc.

Fishel, Lloyd V. (1963) Manufacturing Engineering Technology
A.A.S. 1960 (Gaston Community College). Three years in Engineering Department, R. J. Reynolds Tobacco Co.

Fleeman, T. Glen (1963) Director, Division of Adult Education
B.S. 1958 (Concord College) M.Ed. 1965 (University of North Carolina at Greensboro). Management trainee, F. W. Woolworth Co. one and one-half years; City Schools, Virginia, four years.

Fleming, Gilbert F. (1963) Assistant Director for Extension
A.A. 1956 (Gardner-Webb College) B.B.A. 1958 (Wake Forest College) M.B.A. in progress (University of North Carolina at Greensboro). Experience: Employment Security Commission five years, Hennis Freight Lines, M and J Finance Co.

Foster, Lloyd L. (1963) Electronics, Radio and T.V.
B.S., I.A.Ed. 1957 (Virginia Polytechnic Institute). Four years experience Electronics Technician, U. S. Coast Guard; two and one-half years high school teaching.

Hines, Harvey (1964) Automotive Mechanics
Attended North Carolina State University 1952-53. Further study General Motors Training Center, Ford Motor Co. Training School, High Point College, North Carolina State University. Ten years experience: Service Manager, Sales Manager, owner Ford Motor Company dealership.

***Hinson, Tommy Ralph** (1963) Mathematics
A.A. 1959 (Wingate Junior College); B.S. 1961 (Appalachian State Teachers College). Further study University of North Carolina. Two years teaching experience high school; one year technical institute teaching.

Holland, Margaret Brown (1960) Division Chairman Practical Nursing
R.N. 1946 (North Carolina Baptist Hospital); attended Mitchell College 1941-43. Twenty years experience: private duty, Head Nurse, State operated Pre-Mature Nursing; Co-ordinator Practical Nurse Education, teacher.

Hunter, Clemellyn (1966) English
B.A. 1966 (University of North Carolina at Greensboro)

Hunter, Larry H. (1966) Graphic Arts
Diploma in Printing (Chowan College) B.S. (1966) Arkansas State College

*On leave 1965-66

Hunter, William H. (1965) English

A.B. 1952 (High Point College); M.Ed. in progress at University of North Carolina in Greensboro; Supervisor Hunter Publishing Company thirteen years.

Johnson, Albert S. (1959) Drafting

B.S. 1934 (North Carolina State University). Thirty-two years administrative and teaching experience.

Jones, R. Shelton (1965) Business Administration

B.S. Bus. Adm. 1956; M.S. Bus. Educ. 1963 (Virginia Polytechnic Institute). Statistician U.S.A.F. four years; Office Manager, Norfolk, Virginia Community Fund one year; Coordinator, Vocational Office Training, Chesapeake, Virginia; city schools eight years.

Kirby, Audrey S. (1966) English

B.S. 1947 (Appalachian State Teachers College), M.A. 1962 (Appalachian State Teachers College). Eighteen years teaching experience.

Kahl, George H. (1963) Chairman, Auto-Diesel Division

A.A.S. 1958 (Milwaukee Institute of Technology); B.S. 1963 (Stout University); undergraduate study (Drake University); M.Ed. in progress at University of North Carolina at Greensboro. Experience: Diesel mechanic U.S.M.C., Cummins Engine Co., Buckingham Freight Lines, Suburban Readi-Mix Co.

Lee, Linda (1963) English

A.B. 1963 (Wake Forest College); M.A. in progress University of North Carolina at Greensboro.

McSwain, Clyde (1960) Graphic Arts

Undergraduate study North Carolina State University; special study Lanston Monotype School, Palmer School (Philadelphia), I.C.S., U.S.A.F. Sixteen years experience in printing enterprises; ten years teaching experience. Special work in course design for Richmond, Virginia, Printing Industry and for Printing Division-Western Electric Co.

Mohorn, Donald R. (1965) Agricultural Technology

B.S. Agri. Educ. 1959; M.S. Crop Science 1965 (North Carolina State University). Two years teaching experience; seed specialist N. C. Department Agriculture, two years; Inventory Control Manager, two and one half years Central Carolina Farmers' Exchange.

Morgan, Arthur G. (1964) Television Repair and Servicing, U. S. Navy retired, Master Chief Aviation Electronics Technician

Completed Naval Aviation Electronics Technician and Aviation Radio Operator School. B.S. in progress (North Carolina State

University). Ten years teaching experience in naval aviation electronics school; eight years experience in maintenance of aircraft electronics equipment. Eight years experience television servicing (part-time basis).

Parry, Ernest B. (1962) President

B.S. 1951 (Oswego State Teachers College); M.Ed. 1955 (University of Maryland); Candidate, Ed. D. (University of North Carolina at Chapel Hill.) Ordnance, Armed Forces 1941-45. Seven years high school teaching; three years college teaching.

Penn, William Scott, Jr. (1963) Mathematics; Chairman, Division of Sciences and Humanities, Colonel, U. S. Army retired

B.S. 1934 (U. S. Military Academy); M.A.T. 1963 Duke University; Command and General Staff College; U. S. Army Air Defense School; U. S. Army, Field Artillery and Guided Missiles. Five years experience as instructor or director at service schools.

Phifer, Christine (1964) Bookkeeper

A.A.S. (Mitchell College) Special study Daytona Beach Junior College. Experience with R. S. Dickson and Company, Investment Bankers; Assistant Manager Branch Bank, Daytona Beach, Florida, four years.

Reed, Stewart W. (1961) Chairman, Division of Electronics.

B.S. 1958 (University of Alabama); M.Ed. in progress (University of North Carolina at Greensboro); 1942, Radio Technician First Class (Radio Materials School) Additional study Jacksonville (Ala.) State College. Ten years teaching experience high school; thirteen years experience in radio and television as technician, staff engineer and part owner of television service company.

Robbins, Bobby (1964) Mathematics

B.S. 1964 (Arkansas State College); M.S. Applied Math. in progress (North Carolina State University). Five years experience machine shop and engineering with Wood Products Division, The Singer Co.

Robbins, Carolyn (1964) Business Administration

B.S. Accounting 1964 (Arkansas State College). Five years experience as bookkeeper, supervisor of accounts payable and special payroll, assistant bookkeeper: Payroll and Reports.

Ross, Barbara (1963) Executive Secretarial Science

A.B. 1961 (Lenoir-Rhyne College); M.S. in progress (University of North Carolina at Greensboro). One year experience as bookkeeper. Two years high school teaching experience; two years teaching experience junior college level.

Shepard, Rebecca (1965) Counselor: Student Personnel

A.B. 1930 (University of Georgia); M.Ed. 1962 (University of North Carolina at Chapel Hill). Graduate study Tulane University; advanced graduate study, University of North Carolina at Chapel Hill, North Carolina State University. Ten years experience as social worker; four years teaching experience; four years Coordinator, Guidance Services, and high school counseling, Chapel Hill City Schools. Director of Student Personnel, The Governor's School 1964; Guidance Consultant, N. C. Schools of the Arts 1965 (High School Division).

Staley, Thomas R. (1965) Business Administration; Accounting

B.S. 1960 (Appalachian State Teachers College); further study Guilford College. Two years experience in high school teaching; accountant three years with Davenport, Marion and Caudle, C.P.A.'s.

Stephenson, Andrew H. (1963) Busniess Administration

B.A., B.S. 1963 (High Point College); M.Ed. in progress, Guidance and Counseling, Business Adm. 1966 (University of North Carolina at Greensboro). Advanced study George Washington University, Marine Corps Institute. Fifteen years Retail and Sales experience with Sears-Roebuck, J. C. Penny, Montgomery-Ward, Robert Hall Clothes, National Life and Accident Insurance Co., Central Carolina Motors, Twin City Motor Co.

Stewart, Mary Hull (1959) Practical Nursing

B.A. 1947 (Lenoir-Rhyne College); R.N. 1950 (Johns-Hopkins Hospital School of Nursing) B.S.—Nursing 1950 (Johns-Hopkins University). Two years general duty N. C. Baptist Hospital; two years public school teaching; seven years I.E.C. and Technical Institute teaching; three years Coordinator of Practical Nursing Education Program; Red Cross Home Nursing Program.

Taylor, Earl (1963) Automotive Mechanics

Undergraduate study (High Point College); Special training Ford Motor Company, General Motors Institute. Six years experience as Parts and Service Manager, Ford Dealership; three years teaching experience Technical Institute; four years Engineman U.S. Coast Guard.

Taylor, Thomas A. (1965) Agricultural Technology

B.S. 1953, M.S. 1962, Advanced graduate study (North Carolina State University). North Carolina Agricultural Extension Service

Dairy Specialist three years; graduate research assistant (part-time basis) North Carolina State University five years.

Tedder, Jake D. (1965) Division Chairman, Business Education

A.A. 1949 (Pfeiffer College); B.S. 1955 (University of North Carolina at Chapel Hill); M.A. 1966 (University of North Carolina at Greensboro). Eight years experience in business: Thomasville Furniture Industries, Schnadig Corporation, Latimer Corporation.

Thompson, Bobby Camp (1966) Director, Student Personnel

B.A. 1954 (Lincoln Memorial University) M.A. in Counseling (Appalachian State Teachers College). Further study North Carolina State University. Two years public school teaching and guidance experience (one-half time each); guidance director, public schools, four years.

Trotter, Donald L. (1964) Electronics

B.S.E.E. 1960 (North Carolina State University). U.S. Army Electronic Fire Control, two years; Western Electric Company, four years.

Warlick, William C. (1966) Horticulture

B.S. 1964 (North Carolina State University). Two years experience in industry.

White, Norman (1964) Welding

Special training (North Carolina State University, Pratt Institute). Completed Welding Training Program (American Brass Company). Certified: U.S.A.F. Mil-T5021 and U.S. Navy specifications; graduate Aerial Gunnery Instructor School. Six years experience in industry: American Brass Co., Superior Manufacturing Co.

Whitehead, H. D. (1959) Machine Shop

Undergraduate study in Vocational Education (North Carolina State University). Further training N.Y.A. Machinist Instructor School. Twenty-two years machinist experience in industry. Sixteen years high school teaching.

Williams, L. T. (1963) Chairman, Division of Graphics, Drafting and Design

B.S. 1959 (Western Carolina College). Further study at North Carolina State University; M.A. in progress (University of North Carolina at Greensboro). Instructor part-time North Carolina Advancement School, Davidson Community College. Six years experience as draftsman, technical illustrator (Bassick-Sack Company, Western Electric Company).

Willis, Jack (1965) Physics

B.S.E.E. 1954 (University of Tennessee). Undergraduate study High Point College, Milligan College. Electronics and radar instructor U.S.A.F.; Engineer with Western Electric Company, Bell Telephone Company, Chesapeake and Potomac Telephone Company. Registered Professional Engineer, North Carolina.

Zablocki, Audrey B. (1964) Librarian

B.S. 1950 (Appalachian State Teachers College); M.Ed. in progress (University of North Carolina at Greensboro); advanced professional study (School of Library Science, University of North Carolina at Chapel Hill). Twelve years experience: Special Services, Germany, American Telephone and Telegraph, Western Electric Company, University of North Carolina at Chapel Hill, Salem College.

SECRETARIAL STAFF

Richardson, Mrs. Betty H.	Secretary to the President
Belcher, Mrs. Carlene E.	Secretary to the Director of Trade and Technical Education
Slater, Mrs. Shirley	Secretary to the Director of General Adult Education
Galyean, Mrs. Jo Ann B.	Secretary to the Business Manager
Sykes, Mrs. Lois	Secretary to the Director of Student Personnel Services

Section II
General Information

FORSYTH TECHNICAL INSTITUTE

2100 Link Road

Winston-Salem, North Carolina 27103

ACADEMIC CALENDAR

1966-67

September 19, 20	Orientation
September 21, 22	Registration: Fall Quarter
September 23	Classes Begin
October 7	Last Day Drop-Add
November 23, 24, 25	Thanksgiving Holiday
November 28	Classes Resume
December 13	Classes End
December 16	Registration: Winter Quarter
December 19-30	Christmas Holiday
January 2, 1967	Classes Begin
January 13	Last Day Drop-Add
March 22	Registration: Spring Quarter
March 23	Classes Begin
March 24-28	Spring Holiday
April 10	Last Day Drop-Add
June 9	Classes End
June 14	Registration: Summer Quarter
June 15	Classes Begin
June 29	Last Day Drop-Add
July 3-4	Holiday
August 31	Classes End
September 1	Graduation

1967-68

September 18, 19	Orientation
September 20, 21	Registration: Fall Quarter
September 22	Classes Begin
October 5	Last Day Drop-Add
November 22, 23, 24	Thanksgiving Holiday
November 27	Classes Resume
December 12	Classes End
December 15	Registration: Winter Quarter
December 18-January 1	Christmas Holiday
January 2, 1968	Classes Begin
January 15	Last Day Drop-Add
March 18	Classes End
March 21	Registration: Spring Quarter
March 22	Classes Begin
April 4	Last Day Drop-Add
April 12-16	Spring Holiday
June 7	Classes End
June 12	Registration: Summer Quarter
June 13	Classes Begin
June 26	Last Day Drop-Add
July 4-5	Holiday
August 29	Classes End
August 30	Graduation

1968-69

September 16, 17	Orientation
September 18, 19	Registration: Fall Quarter
September 20	Classes Begin
October 3	Last Day Drop-Add
November 27, 28, 29	Thanksgiving Holiday
December 2	Classes Resume
December 10	Classes End
December 13	Registration: Winter Quarter
December 16-January 1	Christmas Holiday
January 2	Classes Begin
January 15	Last Day Drop-Add
March 19	Classes End
March 24	Registration: Spring Quarter
March 25	Classes Begin
April 4-8	Spring Holiday
April 11	Last Day Drop-Add
June 10	Classes End
June 12	Registration: Summer Quarter
June 13	Classes Begin
June 27	Last Day Drop-Add
July 4	Holiday
August 28	Classes End
August 29	Graduation

HISTORY

The Forsyth Technical Institute can trace its beginning back to early adult and high school vocational courses which were available in Winston-Salem. A Chamber of Commerce Study Committee recommended in 1958 that an Industrial Education Center be built in the community. This Center would provide trade and technical training needed by the industries in this area. Money for the first two buildings was provided through a bond issue and construction was started in late 1959. The first adult classes were started on the campus early in October, 1960. The Winston-Salem Forsyth Industrial Education Center was operated as a part of the Winston-Salem City Schools. A number of the vocational courses were consolidated at the Center and made available to selected high school students and adults. In 1963 a third building was added which provided additional classrooms, laboratories, drafting rooms and a library. With this addition new technical programs were added.

In January, 1964 the name of the school was changed to the Forsyth Technical Institute. This change occurred as a result of the passage of the Community College Act of 1963, which created a state-wide system of community colleges, technical institutes and industrial education centers. The Institute is operated by the State Board of Education through the State Department of Community Colleges and a local board of trustees.

PHILOSOPHY

Forsyth Technical Institute devotes the collective energy of its Board of Trustees and the faculty toward the ultimate aim of preparing people for effective community membership and gainful employment. Inherent within these two broad achievement goals is the total development of the individual student. In accepting this responsibility the Institute maintains a variety of curriculum programs as well as a broad program of adult education.

Vocational competency at the entrance levels in technologies and trades is a major objective in these curriculum programs. A relationship between liberal and vocational education is maintained by requiring a general education base in all programs of all students. This Institute is, however, committed to the development of a high degree of excellence in both technical knowledge and skill.

The Institute is dedicated to the concept of continuing education. Recognizing the constant development of new technologies and new production methods brought about by an expanding industrial program in research and development, and the social and vocational

impact of these factors, a major effort is sustained by the Institute in the area of adult continuing education. This program is directed toward self-improvement in culture, avocational and vocational pursuits.

AREAS OF STUDY AT FORSYTH TECHNICAL INSTITUTE

Associate in Applied Science Degree Programs

- Agricultural Business
- Business Administration
- Drafting and Design Engineering Technology
- Electronics Technology
- Executive Secretarial Science
- Manufacturing Engineering Technology
- Ornamental Horticulture
- Printing Management

Diploma Programs

- Air Conditioning, Refrigeration and Heating
- Automotive Mechanics
- Diesel Truck Maintenance and Repair
- Drafting (Building Trades)
- Graphic Arts (Printing)
- Machinist Program
- Practical Nursing
- Television Repair & Servicing
- Welding

In addition to the full-time diploma programs offered during the day many of the same programs are offered in the evening. The evening classes meet Monday through Friday between the hours of six and ten p. m. The North Carolina Trade Diploma is awarded upon satisfactory completion of the program requirements.

Some Associate in Applied Science Degree courses are offered in the evening.

Accreditation

The Institute is fully accredited by the North Carolina Department of Community Colleges.

Admission Requirements

Forsyth Technical Institute, as do all other branches of the North Carolina Department of Community Colleges, operates under an "open door" admissions policy. This means that any high school graduate, or any high school non-graduate eighteen years old or older, who is able to profit from further formal education may be

admitted to the Institute. A high school diploma or its equivalent is, however, required for admission to the Associate Degree and to the Practical Nursing Programs.

The open door policy does not mean that there are no restrictions on specific programs. It does mean that these restrictions are flexible enough to allow each student the opportunity to eliminate deficiencies through remedial work. When a student is able to meet the specific admission requirements for a given curriculum he may then be enrolled in that curriculum, and he may remain in the program for as long as he makes satisfactory progress.

Although the institution follows an "open door" policy there will be no compromise with standards set by the State Board of Education and administered by the Board of Trustees.

Any person who wishes to be admitted to a diploma or degree program must complete an application form and return it to the Institute. The applications of day-time diploma or degree students must be accompanied by a \$10 non-refundable tuition deposit. The deposit will be applied to tuition when the student is enrolled. Upon receipt of the application blank the Student Personnel Office will inform the prospective student of admission and registration procedures. Applications should be submitted well in advance of the quarter in which the student wishes to enroll. While students may be processed through the day of registration, early application will assure adequate time for processing application materials and may more nearly assure entry into a program for which enrollment is limited.

Those wishing to enter a course of study in the evening school should make application by telephone, or in person, to the Director of Extension Programs.

A student who plans to pursue a Diploma or an Associate Degree program must take the General Aptitude Test Battery at any Employment Security Office, and request that his scores be sent to the Student Personnel Office. He should also request that his high school (and college, if attended) submit transcripts of all previous work undertaken.

Prior to admission all prospective full-time students are required to come to the Student Personnel Office of the Institute for personal interviews in order to discuss choice of program.

In general, there are no specific course requirements for entry into a program of study. Exceptions are: Drafting and Design Engineering Technology, Electronics Technology and Manufacturing Engineering Technology. Students desiring to enter these programs must present one unit in Algebra and one unit in Plane Geometry. Students not having completed these two subjects may arrange to do so through the General Adult Education Program.

Registration

The Institute operates on the quarter system. Each quarter is eleven weeks in length and students who are pursuing diploma or degree programs must register at the beginning of each quarter. All students are expected to register during the time set aside for that purpose. Registration dates are listed in the calendar for the academic year (p. 1).

Tuition charges must be paid at the time of registration.*

Transfer Students

Students who have attended other institutions of higher learning and wish to transfer credit may have a transcript of their records sent to the Institute for evaluation. Such transcripts should be received in the office of the Director of Student Personnel one month prior to the quarter in which the student wishes to enter.

Special Students

A student who is taking less than 12 quarters hours of work during a quarter is considered a special student. Credits earned by such a student may be applied toward a diploma or associate degree depending upon the level of course work completed. Permission to register as a special student is granted at the discretion of the Office of Student Personnel.

FINANCIAL INFORMATION

Tuition and Fees

Since the Institute receives funds from local, state and federal sources, tuition charges are very low. These charges are set by the State Board of Education and are subject to change without notice.

Students pursuing 12 quarter hours or more work for credit pay \$32.00 per quarter.

Students taking fewer than 12 quarter hours pay \$2.50 per credit hour of work attempted (one quarter hour of credit is earned for each one hour per week of class work, two hours of laboratory work, and three hours of shop work satisfactorily completed during an eleven week quarter).

Audit fees are the same as those for credit courses.

Summer School Fees are charged at the same rate as those charged during the regular term.

Out-of-State Students whose legal residence is not in North Carolina will pay tuition fees at $2\frac{1}{2}$ times the in-state rate. Students who

*In cases of hardship installment payment is occasionally arranged.

are boarding or living with relatives in North Carolina but whose parents or guardians have a legal residence out of the state will pay fees at the out-of-state rate, except where State and/or Federal laws prohibit.

Practical Nursing Students pay the same tuition fee as other full-time trade students. The tuition fee covers the use of three nursing uniforms, which are the property of the Institute, plus one nursing cap which the student may keep upon satisfactory completion of her training. White shoes, white hose, books, scissors, nursing watch, Practical Nurse Pin and graduation uniform are purchased by the student.

Satisfactory completion of the Practical Nursing Program qualifies the student to take the North Carolina Board of Nursing licensing examination for which a fee of \$10.00 is charged by the Nursing Board.

Books and Supplies are not furnished by the Institute but are the responsibility of the student. The Institute does not operate a bookstore. Books and supplies are available at a nearby bookstore.

The cost of books varies from program to program and from quarter to quarter, but usually ranges from \$25.00 to \$30.00 per quarter.

Accident Insurance covering injury while at school or en route to and from school is available and strongly recommended, but not required.

Tuition Refunds are not made unless a student is compelled to withdraw for unavoidable reasons. In such cases 2/3 of the tuition paid will be refunded provided that the student withdraws within ten calendar days after the first day of classes (as published in the academic calendar). Tuition refunds will not be considered for tuitions of \$5.00 or less. It is the responsibility of the student to request the refund through the Student Personnel Office.

Breakage Fees

No breakage fee, property-damage fee, or laboratory fee will be charged to students, but in case of breakage or damage due to gross negligence or maliciousness, a student shall be expected to remunerate the institution. His credit may be withheld until proper payment is made.

Late Registration Fees

A late registration fee of \$5.00 will be charged to full-time day curriculum students registering at any time other than the hours published by the Institute. There will be no exceptions.

Scholarships

Limited scholarship funds are available in the Graphic Arts, Printing Administration, Practical Nursing and Diesel programs.

Loans

The Student Personnel Office maintains a file on sources of financial aid available to students. Loans at a very low rate of interest may be secured through the following:

James E. and Mary Z. Bryan Foundation

North Carolina Bankers' Student Loan Plan

North Carolina Funds for Vocational and Technical Students

Winston-Salem Foundation*

The two first named plans are administered through The College Foundation Incorporated.

Students desiring to participate in one of these plans should make application at the Student Personnel Office far enough in advance to allow four to six weeks for processing of application.

Work-Study

On-Campus employment is available to qualified students. Application should be made at the Student Personnel Office.

V.A., Social Security, and D.V.R. Benefits

The Institute is approved for the training of persons eligible for benefits under the Veterans Administration, Social Security Commission and Division of Vocational Rehabilitation.

Additional information concerning these benefits is available at the Student Personnel Office or from offices of the above named agencies.

ACADEMIC INFORMATION

Graduation Requirements for the degree or diploma will vary according to curriculum. The student should refer to the brochure which applies to his program so that he may be certain of the course requirements for graduation. All students must earn a cumulative grade point average of 2.0, and must have received a passing grade in all subjects, in order to be eligible for graduation.

Grade Point Average (G.P.A.) is obtained by dividing the total quality points earned by the total number of credit hours work attempted.

Course Repeat Rule

A student will be permitted to substitute the second grade made on any course for the first grade made on that course until he has

*Available to Forsyth County Residents only.

repeated a total of 10 credit hours of course work. If a course is taken a third time both the second and third grades will be counted. In computing the cumulative grade point average for a student who has repeated a course (within the 10 hours and one-repeat-per-course limitation), the hours and quality points earned the first time will be omitted from the computation and only the second grade, whether F or higher, will count.

Grading System

The following grading system is used by Forsyth Technical Institute.

No. Grade	Letter Equivalent	Description	Quality Points Per Quarter Hour
94-100	A	Excellent	4
86-93	B	Good	3
78-85	C	Fair	2
70-77	D	Passing	1
Below 70	F	Failing	0
Withdrawn			
Passing	W		
Withdrawn			
Failing	W-F		
Incomplete	Inc.		
Audit	Aud.		

The numerical system is used for recording and reporting of grades.

W—Withdrawn-Passing is the grade given to a student who voluntarily withdraws from a course after the first ten days of a quarter and has notified the instructor and the Student Personnel Office in person or in writing of his decision. The student must have a passing grade at the time of withdrawal.

W-F—Withdrawn Failing is the grade given to a student who at any time withdraws from a course without first notifying the instructor and the Student Personnel Office in person or in writing of his decision.

Inc.—Incomplete

The grade of Incomplete is given only if a student has a valid reason for failure to complete the work on schedule. Illness, absence on company business, or other circumstances beyond the student's control are considered valid reasons for non-completion of work. The student must have advised his instructor of the circumstances and have

been granted an incomplete grade. The instructor must have specified what work must be done in order to remove the incomplete and a date by which this must be accomplished. The instructor cannot authorize a date later than one quarter from the quarter in which the incomplete was given. If the work is not completed, the grade automatically becomes an F at the end of that quarter.

Aud.—Audit

Students taking courses as auditors are not required to take examinations or hand in written work, but may do so if they wish. No grade or credit toward a degree or diploma is given.

Withdrawals

A student may withdraw from a course without penalty within the first ten class days of a quarter provided he has permission from the Student Personnel Office.

Academic Standing

To be in good academic standing a beginning student must have earned a grade point average of at least 1.5 by the end of the first quarter. A cumulative grade point average of 2.0 must have been earned by the end of the second quarter and this cumulative G.P.A. (2.0) must be maintained thereafter.

A student failing to attain the required grade point average in any quarter will be placed on academic probation for the following quarter.

A student on probation whose work has improved to the point where he meets the required grade point average for the quarter in which he is enrolled will automatically be removed from probation.

A student who has been placed on probation and who does not earn the required grade point average in the next quarter may be required to withdraw from the program.

A student whose grade point average in any one quarter is less than 1.0 may be withdrawn from the program.

A student who has been on probation twice, non-consecutively, may be withdrawn from the program if his grade point average again falls below grade point average required for that quarter.

If a student fails one of the courses in his major subject area he may be withdrawn from the program at the end of the quarter in which the failure occurred. Each student enrolled in the Institute is expected at all times to be aware of his academic status and to be responsible for knowing whether he has failed to meet the requirements as outlined above for continuing in school.

Instructors, faculty advisors, and counselors in the Student Personnel Office are available for conferences, but it is the responsibility of the student to seek extra help if it is needed.

A student who has earned a cumulative grade point average of 3.5 is eligible to be graduated with high honors.

A student who has earned a cumulative grade point average of 3.0 is eligible to be graduated with honors.

Class Schedule Changes and Late Registration

Late registration and changes in class schedules will not be permitted after the fourth school day of each quarter. All class schedule changes must be approved in writing through the Student Personnel Office. If a student drops a course after the fourth day it will be recorded as a W provided the student has cleared with the Student Personnel Office. If the student withdraws without notifying the Student Personnel Office the grade will be recorded as W-F (Withdrawn Failing).

Attendance

Students are expected to attend all class, laboratory and shop sessions. No grade will be issued for a course if, for whatever reason, a student has been absent for 25% of the total possible class sessions (hours) per course per quarter.

A student must satisfy his instructor that he should be permitted to remain in a course after he incurs any absence in excess of the following:

- A. Three (3) regular one hour class sessions.
- B. Two (2) shop or laboratory sessions which meet for two or more hours.
- C. Two (2) regular one hour class sessions, and one (1) shop or laboratory session which meets for two or more hours.

When a student is absent from a class and a laboratory or shop session which meet consecutively, each session missed will be counted as an absence making a total of two absences for that course.

Students have full responsibility for accounting to their instructors for absences. The instructor has final authority for deciding whether work missed can be made up.

Students are expected to report for class on time. Habitual tardiness may, at the discretion of the instructor, be considered in computing class attendance.

Dismissal

A student may be dismissed from a class or from the Institute for academic deficiencies, or for conduct or personal habits which are not in the best interests of the student and of the institution.

Information on dismissal and re-instatement procedures may be obtained in the Student Personnel Office.

STUDENT SERVICES AND ACTIVITIES

Orientation

All new full-time students are required to participate in an orientation program conducted by members of the faculty, staff and student council. Part-time students are urged to participate also. The purpose of orientation is to acquaint the student with the administrative personnel, faculty, and student leaders. The regulations, policies and privileges of the Institute as set forth in the Catalogue are discussed and interpreted. Informal social activities with fellow students and faculty are a part of the orientation program.

Guidance and Counseling

A counseling service is maintained for students who desire assistance with vocational, educational or personal problems. Aptitude and achievement testing is provided at no cost to the student.

Each full-time student at the Institute is assigned a faculty advisor who will be available for help with problems related to the student's course work. The advisor will serve as a direct link between the student and the administrative staff of the Institute.

Library

The Institute maintains a library containing 5,640 bound volumes which is continually being increased under the direction of a trained librarian in consultation with faculty and administrative personnel. The library also receives 172 periodicals and 6 newspapers. The open shelf system is used; students are encouraged to browse and to use the library as a quiet place to study.

Students receive an intensive course in the use of library materials as a part of orientation to the school.

Laboratory and Shop Equipment

Ample opportunity for practical application of classroom work is an inherent part of the programs offered at the Institute. Within the framework of regulations, which are necessary when expensive equipment is involved, the students have some of the best equipment procurable available for their use and a major expansion of shop and classroom space is now under way.

Housing

The Student Personnel Offices maintains an up-to-date list of rooms, apartments and houses which are available, but it is the student's responsibility to make his own boarding arrangements.

Student Employment and Placement

Students are assisted to the extent possible in finding part-time work while attending the Institute.

The Institute does not maintain an employment placement service for graduates but makes every effort to put students in contact with prospective employers prior to graduation.

Student Canteen

Vending machines for food and drink are located in the Student Canteen.

Selective Service

All male students subject to the conditions of the Selective Service Act may obtain request for deferment forms at the time of registration or at the Student Personnel Office.

Transcripts

Students may obtain two transcripts free of charge upon completion of a program or upon application for employment. Additional transcripts will be made at a cost of \$1.00 per copy.

Student Council

The Student Council serves to promote interest in student activities on and off campus.

The Council is composed of elected representatives from each section of a curriculum including second year and night trade curriculums.

Officers of the Council are elected by and from the membership of the Council. The Council meets weekly, on a regularly scheduled date.

Athletics

There is no formal athletic program offered at the Institute. The students have themselves organized basketball teams, bowling leagues, etc., and do compete with other such teams in Winston-Salem.

Adult Education Division — Extension Courses

The Institute offers extensive evening programs providing a variety of opportunities especially planned to meet the needs of adults and out-of-school youth 18 years of age and over. Work is available for which pre-high school and high school credit may be earned. Home and family courses and general interest subjects are also offered.

Extension courses may be taken for the purpose of self-improvement, or individual courses, where applicable, may apply to the diploma or degree program. Most of the courses are conducted on an evening schedule with individual classes usually meeting one or two evenings per week. A quarterly schedule is followed in the extension program with new courses beginning at the start of each quarter. Schedules of extension courses may be secured in the Student Personnel Office.

Extension courses are offered in the following areas of training:

1. Vocational - Technical
2. Business Education
3. Agricultural Extension
4. Supervisory Development Training
5. Apprenticeship Training
6. Fire Service Training
7. New Industry Training
8. Peace Officer Training

There will be no tuition or registration fees for extension courses except in the case of certain self-supporting programs. Instructional materials fees may be charged in some programs.

VOCATIONAL CURRICULUMS

COURSE SEQUENCES AND DESCRIPTIONS

Forsyth Technical Institute offers a variety of vocational education curriculums, each leading to a diploma upon satisfactory completion of the program. These curriculums are organized on the quarter basis, consisting of four quarters each quarter lasting eleven weeks. The school year begins in September and concludes the following August. Following are curriculum and course descriptions for each separate vocational program.

AIR CONDITIONING AND HEATING

Over 60,000 persons are now employed in the field of air conditioning and refrigeration alone. The demand for people trained in the heating, air conditioning and refrigeration fields is growing very rapidly. As our standard of living increases people expect better control of temperatures, humidity and dust in their places of business and also their homes. Also the demand of business for better food storage facilities is increasing. Another field of work is in the area of automobile and industrial transportation air conditioning. Manufacturing facilities, theaters, as well as churches also offer a great deal of opportunity for the person trained in the field of climate control. All of these areas require a person who is trained to a high level of skill and this Institute combines both the academic training and actual work experience to provide an individual with the desire and ability an opportunity to enter this promising field at a high level of skill.

DESCRIPTION OF THE PROGRAM

Completion of the training program in Heating, Air Conditioning and Refrigeration at Forsyth Technical Institute prepares a student for immediate employment in the field. There is little lag between employment and actual job performance because the student has gained extensive practice on modern units of all kinds provided by the school in his laboratory classes. Below is listed the outline of courses required in order to earn a North Carolina Trade Diploma.

CURRICULUM BY QUARTERS

Course Title			Hours Per Week			Quarter Hours
			Class	Lab.	Shop	Credit
FIRST QUARTER						
AHR 1102	Fundamentals of Refrigeration		4	0	15	9
WLD 1101	Basic Gas Welding		1	0	3	2
MAT 1101	Fundamentals of Mathematics		5	0	0	5
PHY 1101	Applied Science I		3	2	0	4
			—	—	—	—
			13	2	18	20
SECOND QUARTER						
AHR 1103	Domestic and Commercial Refrigeration		4	2	15	10
ELC 1110	Applied Electricity I		3	2	0	4
DFT 1101	Schematics and Diagrams		0	3	0	1
PSY 1101	Human Relations		3	0	0	3
			—	—	—	—
			13	4	15	20

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
THIRD QUARTER							
AHR	1104	Air Conditioning Controls		5	0	3	6
AHR	1105	Principles of Air Conditioning		5	0	9	8
ELC	1111	Applied Electricity II		3	2	0	4
ENG	1102	Grammar		3	0	0	3
				—	—	—	—
				16	2	12	21

FOURTH QUARTER

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
FOURTH QUARTER							
AHR	1106	Calculating Heat Loss		3	0	0	3
HET	1101	Heating Systems		4	0	15	9
ENG	1103	Report Writing		3	0	0	3
BUS	1106	Free Enterprise System		3	0	0	3
				—	—	—	—
				13	0	15	18

COURSE DESCRIPTIONS

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
FIRST QUARTER							
AHR 1102 Fundamentals of Refrigeration				4	0	15	9

Identification, selection and use of hand, measuring and special refrigeration tools. Power drills, grinders and pipe threaders. Copper tubing, fittings and tubing fabrication. Physics related to refrigeration. The basic refrigeration cycle. Classification, characteristics and properties of refrigerants. Types, purpose and principle of operation of compressors, condensers, receivers and evaporators. Assembly and operation of a basic refrigeration system. Leak checking, evacuating and charging. Compressor operational checks. System trouble analysis.

WLD 1101 Basic Gas Welding	1	0	3	2
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Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding; bronze welding, silver-soldering, and flame-cutting methods applicable to mechanical repair work. Prerequisite: None.

MAT 1101 Fundamentals of Mathematics	5	0	0	5
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Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades.

PHY 1101 Applied Science I

3 2 0 4

An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles. Prerequisite: Pass Co-op Arithmetic Test.

SECOND QUARTER**AHR 1103 Domestic and Commercial Refrigeration** 4 2 15 10

Types and operating principles of domestic hermetic units. Also domestic absorption units. Operation and trouble analysis of hermetic electrical components and circuits. Repair and maintenance of hermetic units. Calculation of heat loads. Equipment selection and system balance. The purpose, operating principles, installation and maintenance of the following: floats, automatic and thermostatic expansion valves, thermostatic and pressure motor controls heat exchangers, oil separators, driers, suction filters and minor accessories. Installation, operation, service and trouble analysis of the following equipment; walk-in coolers, display cases, frozen food cabinets, reach-in cabinets, water coolers and ice makers. Also multiple compressor and evaporator system operation.

ELC 1110 Applied Electricity I 3 2 0 4

A detailed study of basic DC circuits involving the structure of matter and electron theory as related to common conductors. The relationship of current, voltage, resistance, and power in the series, parallel and combination circuits will also be investigated. DC sources and methods of DC generation as well as the electromagnetic affect will also be studied.

DFT 1101 Schematics & Diagrams 0 3 0 1

Interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures, and notes. Prerequisite: None.

PSY 1101 Human Relations 3 0 0 3

Development of understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to society, group membership, and relationships within the work situation.

THIRD QUARTER**AHR 1104 Air Conditioning Controls** 5 0 3 6

Theory of pneumatic controls. Principles of operations, application, connection and adjustment: pressure regulators and pneumatic thermostats, duel thermostats, heating-cooling thermostats and humidistats, valves, dampers and pilot positioners, non-bleed controllers, two-position controls. Theory of electrical controls.

Principles of operation, application, wiring and adjusting; Series 20, 40, 60 and 90 controls.

AHR 1105 Principles of Air Conditioning 5 0 9 8

Introduction to air conditioning. Psychrometrics. Principles of load estimating. Air distribution. Applied load estimating. Residential and commercial equipment. Balancing the system.

ELC 1111 Applied Electricity II 3 2 0 4

Fundamental concepts of alternating current including a study of capacitive and inductive effects and resulting phase angle: A study of power, current voltage and impedance in the AC circuit as applied to AC power machinery and control devices relating to heating and refrigeration systems.

ENG 1102 Grammar 3 0 0 3

Development of ability to communicate effectively through the medium of good language usage in speaking and writing.

FOURTH QUARTER

AHR 1105 Calculating Heat Loss 3 0 0 3

Heat distribution by air and liquid systems. Heat loss factors and methods of calculating heat loss. System selection for various buildings.

HET 1101 Heating Systems 4 0 15 9

Oil burner fundamentals. Operation, control and service of oil burner systems. Gas heating devices. Operation, control and service of gas burner systems. Installation and servicing electric heating elements and their controls. Principle of operation of hot water and low pressure systems. Installation and servicing of piping, controls, pumps and coils.

ENG 1103 Report Writing 3 0 0 3

A study and practice in the fundamentals of report writing, including style and mechanics in preparing reports of the various types most likely to be used by people engaged in business and professions. Prerequisite: ENG 1102.

BUS 1106 Free Enterprise System 3 0 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood in a capitalistic economy. Included is a study of the laws of supply and demand and the principles bearing upon production, money exchange, distribution, and consumption in relation to individual enterprise and to society at large. This course is designed to give the student an understanding of the economic world in which he lives and its relationship to his social world.

AUTOMOTIVE MECHANICS REPAIR

The automotive mechanics service and repair field is an evergrowing one with a great demand for well trained men. The person in the automotive field with the knowledge and working background of the automobile will have excellent opportunities for jobs in service stations, dealerships, and independent garages with a good salary depending upon his ability to produce good work. In early 1965, most of the more than half-million automobile mechanics worked in independent repair shops, service departments of new and used car dealers, and gasoline service stations. Many others are employed by Federal, State and local governments; taxicab, bus and automobile leasing companies and by automobile manufacturers. There will be many thousands of job openings in the 1965-75 decade.

DESCRIPTION OF PROGRAM

The automotive program is designed to take the student without any automotive experience and teach him first the many tools used for service and repairs of the automobile. Then he is taught in each phase of the auto program, the construction, purpose and detail operation of each component so that he will have a better understanding of how to service and repair these components. He is also taught the operation and use of equipment that he will encounter in the service field when on the job. By using live autos and proper equipment, we have the student dealing with the actual problems with which he will be confronted when serving the public as a repair man.

CURRICULUM BY QUARTERS

Course Title			Hours Per Week	Quarter Hours		
			Class	Lab.	Shop	Credit
FIRST QUARTER						
PME	1101	Internal Combustion Engines	4	0	15	9
PME	1103	Automotive Fuel Systems	1	0	3	2
BUS	1106	Free Enterprise System	3	0	0	3
ENG	1101	Reading Improvement	3	0	0	3
			—	—	—	—
			11	0	18	17

SECOND QUARTER

AUT	1123	Automotive Chassis & Suspension Systems	4	0	15	9
WLD	1101	Basic Gas Welding	1	0	3	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
PHY	1101	Applied Science I	3	2	0	4
			—	—	—	—
			13	2	18	20

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
THIRD QUARTER							
PME	1102	Automotive Electrical Systems		4	0	15	9
AHR	1101	Automotive Air Conditioning		2	0	3	3
ENG	1102	Grammar		3	0	0	3
				—	—	—	—
				9	0	18	15

FOURTH QUARTER

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
AUT	1124	Automotive Power Trains		4	0	6	6
AUT	1125	Automotive Servicing		3	0	9	6
PSY	1101	Human Relations		3	0	0	3
				—	—	—	—
				10	0	14	15

COURSE DESCRIPTIONS

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
FIRST QUARTER							
PME 1101	Internal Combustion Engines			4	0	15	9

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engines. Testing of engine performance; servicing and maintenance of pistons, valves, cams and camshafts, fuel and exhaust systems, cooling systems; proper lubrication; and methods of testing, diagnosing and repairing. Prerequisite: None.

PME 1103	Automotive Fuel Systems	1	0	3	2
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A study of the characteristics of fuels, types of fuel systems, fuel pumps, carburetors, fuel injectors, special tools and testing equipment for the fuel system.

BUS 1106	Free Enterprise System	3	0	0	3
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The fundamental principles of economics including the institutions and practices by which people gain a livelihood in a capitalistic economy. Included is a study of the laws of supply and demand and the principles bearing upon production, money exchange, distribution, and consumption in relation to individual enterprise and to society at large. This course is designed to give the student an understanding of the economic world in which he lives and its relationship in his social world.

ENG 1101	Reading Improvement	3	0	0	3
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Designed to improve the student's ability to read rapidly and accurately. Special machines are used for class drill to broaden the span of recognition, to increase eye coordination and word group recognition and to train for comprehension in larger units. Prerequisite: None.

SECOND QUARTER

AUT 1123 Automotive Chassis & Suspension Systems 4 0 15 9

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, and steering systems. Units to be studied will be shock absorbers, springs, steering systems, steering linkage, and front end and its alignment. Prerequisite: PME 1102.

WLD 1101 Basic Gas Welding 1 0 3 2

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding; bronze welding; silver-soldering, and flame-cutting methods applicable to mechanical repair work. Prerequisite: None.

MAT 1101 Fundamentals of Mathematics 5 0 0 5

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Prerequisite: None.

PHY 1101 Applied Science I 3 2 0 4

An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles. Prerequisite: None.

THIRD QUARTER

PME 1102 Automotive Electrical Systems 4 0 15 9

A thorough study of the electrical system of the automobile. Battery, cranking mechanism, generator, ignition, accessories and wiring; special tools, and testing equipment for the electrical system. Prerequisite: PME 1101.

AHR 1101 Automotive Air Conditioning 2 0 3 3

General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system. Prerequisite: PHY 1102.

ENG 1102 Grammar 3 0 0 3

Designed to promote effective communication through correct language usage in speaking and writing. Prerequisite: ENG 1101.

FOURTH QUARTER

AUT 1124 Automotive Power Trains **4 0 6 6**

Principles and functions of automotive power train systems: clutches, transmission gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair.

AUT 1125 Automotive Servicing **3 0 9 6**

Emphasis is on the shop procedures necessary in determining the nature of troubles developed in the various component systems of the automobile. Troubleshooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing and replacing.

PSY 1101 Human Relations **3 0 0 3**

Development of understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual are studied in relation to society, group membership, and relationships within the work situation. Prerequisite: None.

BUILDING TRADES DRAFTING

In mid-1964 an estimated 260,000 draftsmen, about 6 per cent of whom were women, were employed in manufacturing and non-manufacturing industries. About 26,000 of these were employed by Federal, State, and local governments while several thousands more were working in colleges, universities and non-profit organizations. Non-manufacturing industries employing large numbers of draftsmen are: engineering and architectural consulting firms, construction firms, and public utilities. Manufacturing industries offer opportunities in machinery, electrical equipment, fabricated metal products and transportation equipment industries. Salaries range from \$350 to \$565, or more, per month, and the employment outlook is expected to continue good.

DESCRIPTION OF PROGRAM

The Building Trades Drafting program offered at Forsyth Technical Institute is a well rounded course of study in both practical and academically related subjects. There are well equipped laboratories with up-to-date facilities and "top notch" instructors who have had extended experience in their field. The Trade Drafting classes are conducted with a true-to-life approach rather than in the regular hypothetical high school atmosphere.

CURRICULUM BY QUARTERS

Course Title		Hours Per Week			Quarter Hours Credit
		Class	Lab.	Shop	
FIRST QUARTER					
DFT 1121	Drafting I	4	0	12	8
MAT 1102	Algebra	5	0	0	5
PHY 1101	Applied Science I	3	2	0	4
DFT 1144	Building Materials and Methods	3	0	0	3
		—	—	—	—
		15	2	12	20

SECOND QUARTER

DFT 1122	Drafting II	4	0	12	8
DFT 1125	Descriptive Geometry	1	4	0	3
ENG 1102	Grammar	3	0	0	3
MAT 1103	Geometry	3	0	0	3
		—	—	—	—
		11	4	12	17

			Hours Per Week			Quarter Hours	
			Class	Lab.	Shop	Credit	
THIRD QUARTER							
DFT	1141	Drafting III	4	0	15	9	
DFT	1143	Building Mechanical Equipment	3	0	0	3	
MAT	1104	Trigonometry	3	0	0	3	
PHY	1104	Applied Science III: Light and Sound	3	2	0	4	
			—	—	—	—	
			13	2	15	19	

FOURTH QUARTER

			Hours Per Week			Quarter Hours	
			Class	Lab.	Shop	Credit	
FOURTH QUARTER							
DFT	1142	Drafting IV	4	0	15	9	
CIV	1101	Surveying	2	0	3	3	
BUS	1106	Free Enterprise System	3	0	0	3	
ENG	1103	Report Writing	3	0	0	3	
			—	—	—	—	
			12	0	18	18	

COURSE DESCRIPTIONS

			Hours Per Week			Quarter Hours	
			Class	Lab.	Shop	Credit	
FIRST QUARTER							
DFT	1121	Drafting I	4	0	12	8	
An introduction to drafting and the study of drafting practices. Instruction is given in the selection, use and care of instruments, singlestroke lettering, applied geometry, freehand sketching consisting of orthographic and pictorial drawings. Orthographic projection, reading and instrument drawing of principal views, single auxiliary views (primary), and double (oblique) auxiliary views will be emphasized. Dimensioning and note practices will be studied with reference to the American Standards Association practices. Methods of reproducing drawings will be included at the appropriate time. Prerequisite: None.							
MAT 1102—Algebra							
			5	0	0	5	
Basic concepts and operations of algebra: historical background of our base-10 number system; algebraic operations: addition, subtraction, multiplication and division; fractions, letter representation, grouping, factoring, ratio and proportions, variation, graphical and algebraic solution of first degree equations; solution of simultaneous equations by: addition and subtraction, substitution, graphing; exponents, logarithms, tables and interpolation. Prerequisite: None.							
PHY 1101 Applied Science I							
			3	2	0	4	
An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles. Prerequisite: None.							

DFT 1144 Building Materials and Methods 3 0 0 3

Materials used in the construction of architectural structures will be studied. Their economic values and limitations affected by locality, budget and codes. Field trips to construction sites and study of manufacturer's specifications for materials. Standard sizes of structural materials and modular construction techniques. Prerequisite: None.

SECOND QUARTER

DFT 1122 Drafting II 4 0 12 8

The trainee will study simple and successive revolutions and their applications to practical problems. Sections and conventions will be studied and both detail and assembly sections will be drawn. Intersections and developments will be studied by relating the drawing to the sheet metal trades. Models of the assigned drawings will be made from construction paper, cardboard, or similar materials as a proof of the solution to the problems drawn.

Methods of drawing and projecting axonometric, oblique, and perspective drawings will be studied with emphasis on the practical applications of pictorial drawings. Various methods of shading will be introduced and dimensioning and sectioning of oblique and axonometric pictorials will be done. Prerequisite: DFT 1121.

DFT 1125 Descriptive Geometry 1 4 0 3

Graphical analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Included are problems dealing with solid geometry theorems. Where applicable, each graphical solution shall be accompanied by the analytical solution. Prerequisite: DFT 1121.

ENG 1102 Grammar 3 0 0 3

Designed to promote effective communication through correct language usage in speaking and writing. Prerequisite: None.

MAT 1103 Geometry 3 0 0 3

Fundamental properties and definitions; plane and solid geometric figures, selected general theorems, geometric construction of lines, angles and plane figures. Dihedral angles, areas of plane figures, volumes of solids. Geometric principles are applied to shop operations. Prerequisite: None.

THIRD QUARTER

DFT 1141 Drafting III 4 0 15 9

An introduction to architectural drafting. Further development of techniques in lettering, dimensioning, freehand sketching and instrument drawing. Drawings of construction details, using appropriate material symbols and conventions.

Working drawings, including plans, elevations, sections, scale details and full-size details will be prepared from preliminary sketches. Prerequisite: DFT 1122.

DFT 1143 Building Mechanical Equipment 3 0 0 3

General study of heating, air conditioning, plumbing and electrical equipment, materials and symbols. Building code requirements pertaining to residential and commercial structures. Reading and interpretation of working drawings by mechanical engineers. Prerequisite: DFT 1122.

MAT 1104 Trigonometry 3 0 0 3

Trigonometric ratios; solving problems with right triangles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric functions; inverse functions, trigonometric equations. All topics are applied to practical problems. Prerequisites: MAT 1102, MAT 1103.

PHY 1104—Applied Science III: Light and Sound 3 2 0 4

This course is designed to acquaint the student with some of the facts and principles concerning the properties and structure of sound and light. Major topics considered will be waves and wave motion, characteristics of waves, theories of light, velocity of light, photometry, mirrors and lenses, reflection and refraction and color. Prerequisite: MAT 1101.

FOURTH QUARTER

DFT 1142 Drafting IV 4 0 15 9

Individual and group participation in the preparation of complete working drawings for a complex architectural structure. Study of drafting room organization and relationships of personnel within the architectural office. Prerequisites: DFT 1141, DFT 1143, DFT 1144.

CIV 1101 Surveying 2 0 3 3

Basic instrumentation and topography will be studied together with field trips and drafting room application of site surveying. Prerequisite: MAT 1104.

BUS 1106 Free Enterprise System 3 0 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood in a capitalistic economy. Included is a study of the laws of supply and demand and the principles bearing upon production, money exchange, distribution, and consumption in relation to individual enterprise and to society at large. This course is designed to give the student an understanding of the economic world in which he lives and its relationship to his social world.

ENG 1103 Report Writing 3 0 0 3

Development of ability to communicate effectively through the medium of good language usage in speaking and writing. Organizing thoughts, and presenting thoughts effective in connection with problems. Prerequisite: ENG. 1102.

DIESEL TRUCK MAINTENANCE AND REPAIR

Diesel mechanics keep bulldozers, tractors, ships, trucks, and other diesel powered equipment that is widely used on highways, farms and industry in good operating order. Most diesel mechanics specialize in maintenance and repair of one of the above classifications of diesel equipment; others specialize in areas such as engine rebuilding or fuel injection. Those who do maintenance and repair work must not only be capable of unit rebuilding, but must also perform periodic cleaning, adjusting and tuneups that are necessary for efficient operation.

DESCRIPTION OF PROGRAM

The diesel curriculum of Forsyth Technical Institute is designed to help the student upon graduation to enter the maintenance division of the trucking industry. The scope and nature of shop work performed by the student match closely that of the trucking industry. Repair and maintenance of current model trucks and component parts obtained from industry assures the student of training on equipment similar to that he will encounter upon graduation. The shop is equipped with hand tools and reconditioning and testing equipment predominantly used by the trucking industry.

CURRICULUM BY QUARTERS

Course Title	Hours Per Week			Quarter Hours Credit
	Class	Lab.	Shop	
FIRST QUARTER				
DSL 1101 Diesel Engines	4	0	15	9
WLD 1101 Basic Gas Welding	1	0	3	2
PHY 1101 Applied Science I	3	2	0	4
ENG 1102 Grammar	3	0	0	3
	—	—	—	—
	11	2	18	18
SECOND QUARTER				
DSL 1102 Diesel Electrical and Fuel Systems	4	0	15	9
AHR 1101 Automotive Air Conditioning	2	3	0	3
MAT 1101 General Mathematics	5	0	0	5
DFT 1101 Schematics and Diagrams	0	3	0	1
	—	—	—	—
	11	6	15	18
THIRD QUARTER				
DSL 1103 Diesel Fuel Injection	4	0	15	9
DSL 1104 Power Trains, Chassis & Suspension Systems	2	0	6	4
BUS 1106 Free Enterprise System	3	0	0	3
	—	—	—	—
	9	0	21	16

			Hours Per Week			Quarter
			Class	Lab.	Shop	Hours
						Credit
FOURTH QUARTER						
DSL	1105	Diesel Servicing	4	0	15	9
MEC	1120	Machine Processes	1	0	6	3
ENG	1103	Report Writing	3	0	0	3
			—	—	—	—
			8	0	21	15

COURSE DESCRIPTIONS

SECOND QUARTER

DSL 1102 Diesel Electrical and Fuel Systems **4 0 15**

A course designed to familiarize the student with the constructional and operational features of the electrical units which are used on preheating, starting and generating systems of diesel engines. Student activities will include reconditioning techniques of generators, starters, and alternators. Use of test equipment measurement, adjustment and trouble shooting is included.

AHR 1101 Automotive Air Conditioning 2 3 0 3

General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system. Prerequisite: PHY 1101.

MAT 1101 Fundamentals of Mathematics 5 0 0 5

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Prerequisite: None.

DFT 1101 Schematics and Diagrams 0 3 0 1

Interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures, and notes. Prerequisite: None.

THIRD QUARTER

DSL 1103 Diesel Fuel Injection 4 0 15 9

The theory offered in this course is a study of the variations in design and the principle of operation of fuel injection systems used on the automotive diesel engine. The practice work offered is designed to familiarize the student with the operation, maintenance and testing of the units which comprise the fuel injection systems of Diesel engines. The student learns to maintain, repair, and test such units as fuel pumps, transfer pumps, spray nozzles and unit injectors.

DSL 1104 Power Trains, Chassis & Suspension Systems 2 0 6 4

Instruction is given in the construction features and operating principles of truck chassis, suspension, steering and brake systems. Students are taught to operate equipment to correct and adjust abnormalities in suspension and steering. Students are familiarized with the variations in design and functioning of brake systems as used by heavy duty trucks. The construction and operation of such component parts as clutches, transmissions, propeller shafts and rear axles are studied.

BUS 1106 Free Enterprise System 3 0 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood in a capitalistic economy. Included is a study of the laws of supply and demand and the principles bearing upon production, money exchange, distribution, and consumption in relation to individual enterprise and to society at large. This course is designed to give the student an understanding of the economic world in which he lives and its relationship to his social world.

FOURTH QUARTER

DSL 1105 Diesel Servicing **4 0 15 9**

A course intended for those who desire to become proficient in the field of diesel diagnosis and repair. Vehicles are first given a complete checkout to determine the trouble. The trouble is then corrected on the basis of the diagnostic report. Training is provided on all major mechanical and electrical units. Preventive maintenance and servicing techniques are taught as recommended by manufacturers.

MEC 1120 Machine Processes **1 0 6 3**

Study of practices used in metalworking shops: introduction to how materials can be utilized. Demonstration of the metalworking lathes, drills, milling machines, shapers, and a study of the capabilities of these machines. Prerequisite: None.

ENG 1103 Report Writing **3 0 0 3**

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: ENG 1102.

GRAPHIC ARTS

Printing is the second largest industry in the United States in terms of the number of existing establishments. Presently there are over 32,000 printing plants—a number exceeded only by those in the food industry. If we gauged national behavior on the basis of this fact, we would have to conclude the American people like to eat first and read second.

Printing is carried on everywhere; all over the world. Wherever there is civilization, there is printing. The printer can be employed on a weekly newspaper in a small town, or he can work in one of the huge plants in Chicago, New York or California.

Working conditions are, as a rule, good. Work, especially on the newspapers, is steady and there are no seasonal layoffs as there are in some other industries.

DESCRIPTION OF PROGRAM

This curriculum is designed to give students experiences in a cluster of activities representing basic areas of the graphic arts industry. The range of experiences is sufficient to enable students to understand a variety of graphic arts processes and to develop skills enabling them to perform these processes with a high degree of efficiency. The print shop is large and well lighted, and the equipment is the most modern which can be obtained.

CURRICULUM BY QUARTERS

Course Title		Hours Per Week			Quarter Hours Credit
		Class	Lab.	Shop	
FIRST QUARTER					
MAT 1101	Fundamentals of Mathematics	5	0	0	5
PRN 1111	Printing Processes	2	2	0	3
PRN 1121	Hand Composition	2	0	6	4
PRN 1122	Letterpress Printing I	2	0	9	5
		—	—	—	—
		11	2	15	17
SECOND QUARTER					
ENG 1101	Reading Improvement	3	0	0	3
PHY 1104	Applied Science III: Light and Sound	3	2	0	4
PRN 1130	Letterpress Printing II	3	0	9	6
PRN 1123	Hot Type Composition I	3	0	9	6
		—	—	—	—
		12	2	18	19

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
THIRD QUARTER							
ENG	1102	Grammar		3	0	0	3
PRN	1125	Offset Camera I		3	0	9	6
PRN	1126	Offset Presswork I		3	0	9	6
PRN	1114	Estimating I		5	0	0	5
				—	—	—	—
				14	0	18	20
FOURTH QUARTER							
BUS	1106	Free Enterprise System		3	0	0	3
PRN	1131	Estimating II		5	0	0	5
PRN	1115	Photography		2	0	3	3
PRN		Elective		4	0	15	9
				—	—	—	—
				14	0	18	20

COURSE DESCRIPTIONS

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
FIRST QUARTER							
MAT	1101	Fundamentals of Mathematics		5	0	0	5
Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Prerequisite: None.							
PRN	1111	Printing Processes		2	2	0	3
A study of variety of printing plates and processes with emphasis on identification, application and evaluation. Specific processes will include lithography, flexography, collotype, gravure, and silk screen. Instruction will include demonstrations with hand cut and photosensitive films in producing copy by the screen process. Prerequisite: None.							
PRN	1121	Hand Composition		2	0	6	4
This unit is designed to give practice in the fundamentals of hand composition of which are: setting type, spacing lines, justification, tying up type forms, pulling proofs, reading proofs, correcting errors, distributing type, leaders and use of borders. A study of the elements in layout and design plus the setting of jobs to illustrate the principles of display composition which are: optical center, balance proportion, shape harmony, tone, contract, appropriateness and grouping. Instruction will include the fundamentals and operation of composing room equipment. Prerequisite: None.							

PRN 1122 Letterpress Printing I

2 0 9 5

Theory and practice of relief printing, involves the principles of the platen press, operation and practice in feeding the press. It also includes locking up forms, selecting ink, preparing the tympan, setting gauge pins, marking out a sheet, spotting up a sheet, and cutting simple overlays. Imposition of 2-4-8-16 and 32 page forms will be covered. Make ready and printing of various commercial forms, perforating rules, numbering machines, halftones, die cutting and scoring. The adjustment of the platen and the ink rollers are also included. Shop safety, care and oiling of presses. Prerequisite: None.

SECOND QUARTER**ENG 1101 Reading Improvement**

3 0 0 3

Designed to improve the student's ability to read rapidly and accurately. Special machines are used for class drill to broaden the span of recognition, to increase eye coordination and word group recognition and to train for comprehension in larger units. Prerequisite: None.

FHY 1104 Applied Science III: Light and Sound

3 2 0 4

This course is designed to acquaint the student with some of the facts and principles concerning the properties and structure of matter and sound and light. Major topics considered will be the general and specific properties of matter, atomic theory, physical and chemical changes, nuclear changes, the atmosphere and its effect on matter, water and its relationships with other forms of matter, waves and wave motion, characteristics of waves, theories of light, velocity of light, photometry, mirrors and lenses, reflection and refraction and color. Prerequisite: MAT 1101.

PRN 1130 Letterpress Printing II

3 0 9 6

The students gain more experience in the operation of the platen presses. Most of the shop work at this time will cover the operation and care of the Heidelberg platen, Miehle Vertical, and the Kelly-C automatic presses. The make ready of commercial forms, mixed forms, two color and process color printing and production, and ink mixing will be covered in this unit. Prerequisite: PRN 1122.

PRN 1123 Hot Type Composition I

3 0 9 6

Students gain further experience through setting straight matter, leader and tabular jobs of varying styles, advertising composition in difficult width is made up at this time. Machine maintenance and making minor adjustments and instruction will be given in how to order parts for the machine and how to use the type specimen books at this time. Prerequisite: PRN 1121.

THIRD QUARTER

ENG 1102	Grammar	3	0	0	3
Designed to promote effective communication through correct language usage in speaking and writing. Prerequisite: ENG 1101.					

PRN 1125 Offset Camera I 3 0 9 6
Instruction will include the theory and practice of preparing line and halftone negatives and positives for offset lithography. Camera settings, lens settings, chemical preparation, and film processing will be covered, an integral part of dark-room procedure. Negative handling, stripping, making flats, and exposing pre-sensitized plates will be taught as a part of the photo-mechanical process. Prerequisite: None.

PRN 1126 Offset Presswork I	3	0	9	6
Theory and practice of operating offset printing presses will include experience on the Davidson, and A.T.F. Chief offset presses. Instructions will include inking and water systems, registration, feed and delivery systems, roller and blank care, and basic trouble shooting. Prerequisite: None				

PRN 1114	Estimating I	5	0	0	5
Theory and practice in determining costs for production printing jobs in the area of relief printing, offset printing, and bindery. Instruction will include computing costs of materials, press capacity, selection of processes, and preparing quotes for bids. Prerequisites: PRN 1122, PRN 1125, MAT 1120					

FOURTH QUARTER

BUS 1106	Free Enterprise System	3	0	0	3
The fundamental principles of economic including the institutions and practices by which people gain a livelihood in a capitalistic economy. Included is a study of the laws of supply and demand and the principles bearing upon production, money exchange, distribution, and consumption in relation to individual enterprise and to society at large. This course is designed to give the student an understanding of the economic world in which he lives and its relationship to his social world.					

PRN 1131 Estimating II **5 0 0 5**

In this course the students review some of the previous work, and will estimate jobs of a more special nature of work. At this time the students will study the complete operation of the small, medium and large plants, and how and why the selling cost will be different in these plants. Materials, labor, building equipment and administrative cost will be covered. Prerequisite: PRN 1114, PRN 1125, PRN 1126.

PRN 1115	Photography	2	0	3	3
A beginning course in photography for printing students. Areas included are operation of a camera, developing film, printing pictures by contact and projection, and methods of lighting. Prerequisite: None.					

MACHINIST

If there is any one employee that modern manufacturing companies cannot do without it is probably the machinist. It is the machinist who is responsible for forming out of steel the idea that the engineer sends to him in the form of a blueprint. To be able to make very complex parts using lathes, milling machines, and grinders requires a great deal of skill. Most companies are interested in hiring only those who have been well trained before seeking employment. This reduces training time and also permits the company to pay higher starting salary. It makes for increased chances for advancement, raises, and job success.

DESCRIPTION OF PROGRAM

The machinist course offered at the Forsyth Technical Institute is both broad and detailed. It is broad enough to permit the graduate to fill a number of jobs in the machine shop of a company, but it has the depth to make certain that he understands the work fully. The demand for trained machinists is much greater than the supply. For the person who likes to work with his hands, to see formless pieces of metal take the shape of an engine piston, or a part for a modern missile, or perhaps an instrument used for surgical work, the machinist field might be just the area in which he would find job happiness and financial success.

SUGGESTED CURRICULUM BY QUARTERS

Course Title			Hours Per Week	Quarter Hours		
			Class	Lab.	Shop	Credit
FIRST QUARTER						
MEC 1101	Machine Shop Theory and Practice		4	0	15	9
MAT 1101	Fundamentals of Mathematics		5	0	0	5
DFT 1104	Blueprint Reading: Mechanical		0	3	0	1
WLD 1101	Basic Gas Welding		1	0	3	2
BUS 1106	Free Enterprise System		3	0	0	3
			—	—	—	—
			13	3	18	20
SECOND QUARTER						
MEC 1102	Machine Shop Theory and Practice		4	0	15	9
MAT 1103	Geometry: Plane		3	0	0	3
PHY 1101	Applied Science I		3	2	0	4
DFT 1105	Blueprint Reading: Mechanical		0	3	0	1
MEC 1115	Treatment of Ferrous Metals		2	0	3	3
			—	—	—	—
			12	5	18	20

				Hours Per Week	Quarter		
				Class	Lab.	Shop	Hours
							Credit
THIRD QUARTER							
MEC 1103	Machine Shop Theory and Practice			4	0	15	9
DFT 1106	Blueprint Reading: Mechanical			0	3	0	1
MAT 1104	Trigonometry			3	0	0	3
ENG 1102	Grammar			3	0	0	3
MEC 1116	Treatment of Non-Ferrous Metals			2	0	3	3
				—	—	—	—
				12	3	18	19
FOURTH QUARTER							
MEC 1104	Machine Shop Theory and Practice			4	0	15	9
MAT 1123	Machinist Mathematics			3	0	0	3
PHY 1102	Applied Science II			3	2	0	4
ENG 1103	Report Writing			3	0	0	3
				—	—	—	—
				13	2	15	19

COURSE DESCRIPTIONS

				Hours Per Week	Quarter		
				Class	Lab.	Shop	Hours
							Credit
FIRST QUARTER							
MEC 1101	Machine Shop Theory and Practice			4	0	15	9
An introduction to the machinist trade and the potential it holds for craftsman. Deals primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice. Prerequisite: None.							
MAT 1101	Fundamentals of Mathematics			5	0	0	5
Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Prerequisite: None.							
DFT 1104	Blueprint Reading: Mechanical			0	3	0	1
Interpretation and reading of blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes. Prerequisite: None.							
WLD 1101	Basic Gas Welding			1	0	3	2
Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding; bronze welding, silver soldering, and flame-cutting methods applicable to mechanical repair work. Prerequisite: None.							
BUS 1106	Free Enterprise System			3	0	0	3
The fundamental principles of economics including the institutions and practices by which people gain a livelihood in a capitalistic economy. Included is a study							

of the laws of supply and demand and the principles bearing upon production, money exchange, distribution, and consumption in relation to individual enterprise and to society at large. This course is designed to give the student an understanding of the economic world in which he lives and its relationship to his social world.

SECOND QUARTER

MEC 1102 Machine Shop Theory and Practice 4 0 15 9

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine shaper. The student will be introduced to the basic operations on the cylindrical grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course. Prerequisite: MEC 1101.

MAT 1103 Geometry: Plane 3 0 0 3

Fundamental properties and definitions; plane and solid geometric figures, selected general theorems, geometric construction of lines, angles and plane figures. Dihedral angles, areas of plane figures, volumes of solids. Geometric principles are applied to shop operations. Prerequisite: None.

PHY 1101 Applied Science I 3 2 0 4

An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles. Prerequisite: None.

DFT 1105 Blueprint Reading: Mechanical 0 3 0 1

Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes. Prerequisite: DFT 1104.

MEC 1115 Treatment of Ferrous Metals 2 0 3 3

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, and cast iron will be topics for study. Prerequisite: None.

THIRD QUARTER

MEC 1103 Machine Shop Theory and Practice 4 0 15 9

Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology with additional processes on calculating, cutting and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder. Prerequisite: MEC 1102.

DFT 1106—Blueprint Reading: Mechanical **0 3 0 1**

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly. Prerequisite: DFT 1105.

MAT 1104 Trigonometry **3 0 0 3**

Trigonometric ratios; solving problems with right triangles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric functions; inverse functions, trigonometric equations. All topics are applied to practical problems. Prerequisite: MAT 1103.

ENG 1102 Grammar **3 0 0 3**

Designed to promote effective communication through correct language usage in speaking and writing.

MEC 1116 Treatment of Non-Ferrous Metals **2 0 3 3**

Continuation of the study of physical metallurgy. The non-ferrous metals: bearing metals (brass, bronze, lead), light metals (aluminum and magnesium), and copper and its alloys are studied. Powder metallurgy, titanium, zirconium, indium and vanadium are included in this course. Prerequisite: MEC 1115.

FOURTH QUARTER**MEC 1104 Machine Shop Theory and Practice** **4 0 15 9**

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc.. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry. Prerequisite: MEC 1103.

MAT 1123 Machinist Mathematics **3 0 0 3**

Introduces gear ratio, lead screw and indexing problems with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems; concludes with an introduction to compound angle problems. Prerequisite: MAT 1104.

PHY 1102 Applied Science II **3 2 0 4**

The second in a series of two courses of applied physical principles, Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power. Prerequisite: PHY 1101.

ENG 1103 Report Writing **3 0 0 3**

Development of ability to communicate effectively through the medium of good language usage in speaking and writing. Organizing thoughts, and presenting thoughts effectively in connection with problems. Prerequisite: ENG 1102.

PRACTICAL NURSING PROGRAM

The graduate Licensed Practical Nurse is an important member of the health team. In addition to the nursing care she is able to give the convalescing patients and those with chronic or handicapping conditions, she is equipped to assist registered nurses in providing care for the more acutely ill and injured. Opportunities for employment in hospital, private and nursing homes, doctors' offices, schools and industries are almost unlimited. Both men and women find opportunities for service as Licensed Practical Nurses. The primary objective of the Practical Nurse Education Program is to educate the student in the knowledge, appreciation, and skill which will be needed as an effective practitioner within the defined scope of Practical Nursing.

DESCRIPTION OF PROGRAM

The Practical Nursing student receives one year (four quarters) of classroom instruction and nursing practice through the Practical Nurse Education Programs sponsored by the Department of Community Colleges, State Board of Education, Vocational Technician Division.

Following a basic period of classroom instruction in fundamentals of nursing and principles from the biological and social sciences, the student has the opportunity to practice nursing skills under faculty supervision in the hospital area. In advanced period, she studies the nursing care of patients of all ages through carefully planned assignments correlated with classroom instruction in medical-surgical nursing, care of the sick child, and care of the mother and newborn infant.

CURRICULUM BY QUARTERS

Course Title		Hours Per Week			Quarter Hours Credit
		Class	Lab.	Shop	
FIRST QUARTER					
PNE 1101	Fundamentals of Practical Nursing	7	0	6	9
PNE 1102	Nutrition and Diet Therapy	2	0	0	2
PNE 1103	Anatomy and Physiology	4	0	0	4
PNE 1104	Growth and Development	3	0	0	3
PNE 1105	Pharmacology I	2	0	0	2
		—	—	—	—
		18	0	6	20
SECOND QUARTER					
PNE 1106	Medical-Surgical Nursing I	5	0	0	5
PNE 1107	Maternity Nursing	2	0	0	2
PNE 1108	Nursing of Children	2	0	0	2
PNE 1109	Clinical Experience—Med., Surg., or O.B., one of the three	0	0	24	8
		—	—	—	—
		9	0	24	17

				Hours Per Week	Quarter Hours
		Class	Lab.	Shop	Credit
THIRD QUARTER					
PNE	1110	Medical-Surgical Nursing II	5	0	0
PNE	1111	Pharmacology II	2	0	0
PNE	1112	Clinical Experience—Med., Surg., or O.B., one of the three	0	0	24
ENG	1102	English Grammar	3	0	0
		—	—	—	—
		10	0	24	18
FOURTH QUARTER					
PNE	1113	Medical-Surgical Nursing III	5	0	0
PNE	1114	Clinical Experience—Med., Surg., or O.B., one of the three	0	0	24
PSY	1101	Human Relations	3	0	0
ENG	1103	Report Writing	3	0	0
		—	—	—	—
		11	0	24	19

COURSE DESCRIPTIONS

				Hours Per Week	Quarter Hours
		Class	Lab.	Shop	Credit
FIRST QUARTER					
PNE	1101	Fundamentals of Practical Nursing	7	0	6
Interpretation of the role of the practical nurse student and basic knowledge to be used in performing nursing. Philosophy and objectives of practical nursing in the Technical Institute setting. Using adequate study methods and materials. Beginning knowledge of interpersonal relationships in nursing. Principles basic to nursing practice. Body mechanics for nurse and patient. Sterilization techniques and disinfection methods. Principles of medical and surgical asepsis. Use of hospital equipment. Techniques in daily hygienic patient care. Spoken and written communications for nurses. Laboratory practice in simple skills and hygienic care of patients.					
PNE	1102	Nutrition	2	0	0
Designed to give knowledge of the basic principles of nutrition for nurse and patient. Functions and sources of nutrients. The mechanics of digestion, absorption and metabolism of nutrients. Principles of meal planning Nutritional requirements for all age groups modified by religious, cultural, social, psychological.					
PNE	1103	Anatomy and Physiology	4	0	0
A thorough study of the general plan of the body and the nine systems; nervous, endocrine, skeletal, muscular, circulatory, digestive, respiratory, urinary, male and female reproductive system. Designed for understanding of how the body controls its functions, how the body stands erect and moves, how the body distributes food and oxygen and removes waste, how the body provides for survival.					

PNE 1104 Growth and Development 3 0 0 3

Designed to show the patient as a member of a family whose life is altered by illness. Normal child development from birth to old age. Fears, hospitalization of the young child, school-age adolescent. Community resources affecting the family. Leisure time and diversions for the adult and child. Physical changes with age. Mental and personality changes of the elderly. Community responsibilities and resources for young and old.

PNE 1105 Pharmacology I 2 0 0 2

Development of the skill of giving oral medications. Knowledge of drug sources, methods of preparation and storage. The classification of drugs by use and by drug content.

SECOND QUARTER

PNE 1106 Medical-Surgical Nursing I 5 0 0 5

Planned to give beginning understanding of the nursing care of common problems caused by illness. Emotional reactions caused by illness and hospitalization. Nurse-patient relationships. Fundamental processes of illness and nursing care. Physiology, reactions and nursing care of pain. Diagnostic tests. The nursing needs of the cancer patient. Anesthetic agents and the uses for them. Preoperative and postoperative nursing care. Rehabilitation. Modification of diet for disease conditions.

PNE 1107 Maternity Nursing 2 0 0 2

Presentation of modern aspects of maternity nursing with emphasis on normal obstetrics. Detailed presentation of material on nursing care during antepartum, labor and postpartum periods. Care of the newborn baby and methods of teaching new mothers. Emphasis is to provide better and safer care for the expectant mother and her baby.

PNE 1109 Clinical Experience 0 0 24 8

Beginning experience in a general hospital under supervision of clinical teachers. Opportunities for practicing skills learned in laboratory practice. Emphasis on basic hygienic care for ambulatory and bed patients. Practice in charting nurses' notes and making observations with the use of testing materials and instruments. Beginning opportunities to develop concepts needed for caring for patients as a part of a nursing team.

PNE 1108 Nursing of Children 2 0 0 2

Understanding of the scope and aims of modern nursing of children. Physical differences in the child from the adult. Methods of answering the needs of the hospitalized child and his parents. Common disorders of children and their implications for nursing care.

THIRD QUARTER

PNE 1110 Medical-Surgical Nursing II	5	0	0	5
Designed to develop knowledge of common disorders of body systems, the nursing care, socio-psychological implications. Includes disorders of the cardiovascular, Gastro-Intestinal, Respiratory and Integumentary systems. Disorders of eye, ear, nose and throat.				
PNE 1111 Pharmacology II	2	0	0	2
Development of a thorough knowledge of the equipment and sterile techniques used in preparing and giving injections. Administration of drugs by inhalation, topical application. Insulin therapy. Home drug preparation and storage.				
PNE 1112 Clinical Experience	0	0	24	8
Further experience in the practice of nursing skills. Continued experiences in the basic areas of medical-surgical nursing, pediatric nursing or obstetrical nursing. Experience in giving oral and topical medications under the direction of clinical teacher. Emphasis on observation of signs and symptoms and taking part in making nursing judgements in team conference. Isolation techniques and practice, oxygen therapy.				
ENG 1102 English Grammar	3	0	0	3
Designed to promote effective communication through correct language usage in speaking and writing.				

FOURTH QUARTER

PNE 1113 Medical-Surgical Nursing III	5	0	0	5
Continuation of study of disorders of the body systems. Includes Musculo-Skeletal, Endocrine, and Nervous Systems. Urological disorders and nursing care. First aid. Advanced nursing ethics, medico-legal aspects of practical nursing, organizations for the graduate practical nurse.				
PSY 1101 Human Relations	3	0	0	3
A study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships within the work situation.				
PNE 1114 Clinical Experiences	0	0	24	8
Student learns her role as an assistant to the professional nurse in caring for the more seriously ill patient. Continued experience in the basic areas of medical-surgical nursing, pediatric nursing or obstetrical nursing under supervision of clinical teachers. Practice in giving injections under the direct supervision of a clinical teacher. Experience in more complicated nursing treatments. Organization for patient care for large groups of patients.				
ENG 1103 Report Writing	3	0	0	3
Development of ability to communicate effectively through the medium of good language usage in speaking and writing. Organizing thoughts, and presenting thoughts effectively in connection with problems. Prerequisite: ENG 1102.				

TELEVISION REPAIR

Skilled television and radio service technicians use their knowledge of electrical and electronic parts and circuits to install and repair a growing number of electronic products. Of these, television receivers are by far the most prominent; other major electronic products are radios, phonographs, inter-communication equipment, tape recorders and public address systems. Employment of television and radio service men is expected to increase rapidly during the next ten years with earnings ranging from \$60 to \$165 weekly.

DESCRIPTION OF PROGRAM

The television repair curriculum includes a training program which will provide the basic knowledge and skills involved in the installation, maintenance and servicing of television receivers. During the last quarter intensive work in servicing of color television will be given. A working knowledge of circuits, schematic diagrams and troubleshooting procedures are given in the one year day and two year evening programs. Intensive laboratory studies supplement classroom lecture and demonstration.

CURRICULUM BY QUARTERS

Course Title		Hours Per Week			Quarter Hours Credit
		Class	Lab.	Shop	
FIRST QUARTER					
ELC 1120	Direct and Alternating Current	8	6	6	13
MAT 1102	Algebra	5	0	0	5
ENG 1101	Reading Improvement	3	0	0	3
		—	—	—	—
		16	6	6	21
SECOND QUARTER					
ELN 1121	Vacuum Tubes and Circuits	4	4	3	7
ELN 1122	Transistor Theory and Circuits	5	4	6	9
PHY 1104	Applied Science III: Light and Sound	3	2	0	4
		—	—	—	—
		12	10	9	20
THIRD QUARTER					
ELN 1123	Black and White Television Servicing	9	0	21	16
ENG 1102	Grammar	3	0	0	3
		—	—	—	—
		12	0	21	19
FOURTH QUARTER					
ELN 1124	Color Television Servicing	9	0	21	16
BUS 1106	Free Enterprise System	3	0	0	3
		—	—	—	—
		12	0	21	19

COURSE DESCRIPTIONS

FIRST QUARTER		Hours Per Week			Quarter
		Class	Lab.	Shop	Hours

ELC 1120 Direct and Alternating Current 8 6 6 13

A study of the structure of matter and the electron theory, the relationship between voltage, current and resistance in series, parallel and series-parallel circuits. Analysis of direct current circuits by Ohm's law and Kirchhoff's law; sources of direct current potentials. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis.

MAT 1102 Algebra 5 0 0 5

Basic concepts and operations of algebra: historical background of our base-10 number system; algebraic operations: addition, subtraction, multiplication, and division; fractions, letter representation, grouping, factoring, ratio and proportions, variation; graphical and algebraic solution of first degree equations; solution of simultaneous equations by: addition and subtraction, substitution, graphing; exponents, logarithms, tables and interpolation.

ENG 1101 Reading Improvement 3 0 0 3

Designed to improve the student's ability to read rapidly and accurately. Special machines are used for class drill to broaden the span of recognition, to increase eye coordination and word group recognition and to train for comprehension in larger units.

SECOND QUARTER

ELN 1121 Vacuum Tubes and Circuits 4 4 3 7

An introduction to vacuum tubes and their development; the theory, characteristics and operation of vacuum diodes, semi-conductor diodes, rectifier circuits, filter circuits, triodes and simple voltage amplifier circuits. Prerequisite: ELC 1120.

ELN 1122 Transistor Theory and Circuits 5 4 6 9

Transistor theory, operation, characteristics and their application to audio and radio frequency amplifier and oscillator circuits. Prerequisite: ELC 1120.

PHY 1104 Applied Science III: Light and Sound 3 2 0 4

This course is designed to acquaint the student with some of the facts and principles concerning the properties and structure of sound and light. Major topics considered will be waves and wave motion, characteristics of waves, theories of light, velocity of light, photometry, mirrors and lenses, reflection and refraction and color.

THIRD QUARTER

ELN 1123 Black and White Television Servicing 9 0 21 16

A study of principles of black and white television receivers, alignment of radio and intermediate frequency amplifiers, adjustment of horizontal and vertical sweep circuits will be taught. Techniques of troubleshooting and repair of TV receivers with the proper use of associated test equipment will be stressed. Additional study of more specialized servicing techniques and oscilloscope waveform analysis will be used in the adjustment, troubleshooting and repair of the black and white television circuits.

ENG 1102 Grammar 3 0 0 3

Designed to promote effective communication through correct language usage in speaking and writing.

FOURTH QUARTER

ELN 1124 Color Television Servicing 9 0 21 16

Theory of operation of the television circuits peculiar to color receivers. The course includes composite color telecasting signals, color receiver detectors, kinescopes, convergance, and matrix networks. Theory of operations and practical test bench techniques will be taught including troubleshooting alignment, and convergance.

The fundamental principles of economics including the institutions and practices by which people gain a livelihood in a capitalistic economy. Included is a study of the laws of supply and demand and the principles bearing upon production, money exchange, distribution, and consumption in relation to individual enterprise and to society at large. This course is designed to give the student an understanding of the economic world in which he lives and its relationship to his social world.

WELDING

For the young man who wants to get into the mainstream of manufacturing, or to work toward owning his own business, or perhaps enter the military service and perform an important job, welding should be considered as a promising career field. As American industry grows it needs larger numbers of trained people who have skills that are in everyday use in industry. It is difficult to think of anything that is used each day (such as our cars, refrigerators, airplanes, wash-in machines) that does not have some welded part on it. Quality welding cannot be done without careful training and practical experience, but once a person is trained in this field the jobs available are numerous.

DESCRIPTION OF PROGRAM

The welding course offered at the Forsyth Technical Institute provides the student with the necessary practical experience in welding and also broadens his technical education in such fields as blueprint reading, shop math, study of metals, and physical science. The following list of courses show in detail the work required for completion of the program. Upon completion of this program the student is qualified to enter the welding field in a well-paying job. At the present time the demand for welders is much greater than the supply.

CURRICULUM BY QUARTERS

			Hours Per Week	Quarter Hours		
			Class	Lab.	Shop	Credit
FIRST QUARTER						
ENG	1102	Grammar	3	0	0	3
BUS	1106	Free Enterprise System	3	0	0	3
DFT	1104	Blueprint Reading: Mechanical	0	0	3	1
WLD	1120	Oxyacetylene Welding and Cutting	4	0	15	9
			—	—	—	—
			10	0	18	16

SECOND QUARTER

MAT	1101	Fundamentals of Mathematics	5	0	0	5
PHY	1101	Applied Science I	3	2	0	4
WLD	1121	Basic Arc Welding	3	0	15	8
WLD	1112	Mechanical Testing and Inspection I	0	2	0	1
			—	—	—	—
			11	4	15	18

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
THIRD QUARTER							
ENG 1103	Report Writing			3	0	0	3
MAT 1103	Geometry			3	0	0	3
MEC 1115	Treatment of Ferrous Metals			2	0	3	3
WLD 1124	Advanced Arc Welding			3	0	15	8
WLD 1123	Inert Gas Welding			1	0	3	2
				—	—	—	—
				12	0	21	19

FOURTH QUARTER

PSY 1101	Human Relations			3	0	0	3
MEC 1112	Machine Shop Processes			0	0	6	2
WLD 1113	Mechanical Testing and Inspection II			0	2	0	1
WLD 1126	Advanced Inert Gas Welding			1	0	4	3
WLD 1127	Introduction to Pipe Welding			3	0	12	7
				—	—	—	—
				7	2	22	16

COURSE DESCRIPTIONS

				Hours Per Week	Quarter Hours		
				Class	Lab.	Shop	Credit
FIRST QUARTER							
ENG 1102	Grammar			3	0	0	3
Designed to promote effective communication through correct language usage in speaking and writing.							
BUS 1106	Free Enterprise System			3	0	0	3
The fundamental principles of economics including the institutions and practices by which people gain a livelihood in a capitalistic economy. Included is a study of the laws of supply and demand and the principles bearing upon production, money exchange, distribution, and consumption in relation to individual enterprise and to society at large. This course is designed to give the student an understanding of the economic world in which he lives and its relationship to his social world.							
DFT 1104	Blueprint Reading: Mechanical			0	0	3	1
Interpretation and reading of blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes. Prerequisite: None.							
WLD 1120	Oxyacetylene Welding and Cutting			4	0	15	9
Introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature of the equipment, assembly of units. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, butt welding in the flat, vertical and overhead position, brazing, hard and soft soldering. Safety procedures are stressed throughout the program of instruction in the use of tools and equipment. Students perform mechanical testing and inspection to determine quality of the welds. Prerequisite: None.							

SECOND QUARTER**MAT 1101 Fundamentals of Mathematics**

5 0 0 5

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentage, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Prerequisite: None.

PHY 1101 Applied Science I

3 2 0 4

An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles. Prerequisite: None.

WLD 1121 Basic Arc Welding

3 0 15 8

The operation of AC transformers and DC motor generator arc welding sets. Studies are made of welding heats, polarities, and electrodes for use in joining various metal alloys by the arc welding process. After the student is capable of running beads, butt and fillet welds in all positions are made and tested in order that the student may detect his weaknesses in welding. Safety procedures are emphasized throughout the course in the use of tools and equipment. Prerequisite: None.

WLD 1112 Mechanical Testing and Inspection I 0 2 0 1

The standard methods for mechanical testing of welds. The student is introduced to the various types of tests and testing procedures and performs the details of the tests which will give adequate information as to the quality of the weld. Types of tests to be covered are: bend, destructive, free-bend, guided-bend, nick-tear, notched-bend, tee-bend, nondestructive, V-notch, Charpy impact, etc. Prerequisites: WLD 1120, WLD 1121.

THIRD QUARTER**ENG 1103 Report Writing**

3 0 0 3

Development of ability to communicate effectively through the medium of good language in speaking and writing. Organizing thoughts, and presenting thoughts effectively in connection with problems.

MAT 1103 Geometry

3 0 0 3

Fundamental properties and definitions; plane and solid geometric figures, selected general theorems, geometric construction of lines, angles and plane figures. Dihedral angles, areas of plane figures, volumes of solids. Geometric principles are applied to shop operations. Prerequisite: None.

MEC 1115 Treatment of Ferrous Metals

2 0 3 3

Investigates the properties of ferrous metals and tests to determine their use. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys,

shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, and cast iron will be topics for study. Prerequisite: None.

WLD 1124 Advanced Arc Welding

3 0 15 8

The student is given extensive practice in the welding of different size pressure pipe in all positions. The micro-wire welding process is introduced and a thorough study of such topics as principles of operation, nomenclature of machine, filler metals and shielding gases for the different type of metals. Special processes are taught such as, hard-facing, laser beam and ultra-sonic welding. The student is introduced to the welder certification procedures and practices.

WLD 1123 Inert Gas Welding

1 0 3 2

Introduction and practical operations in the use of inert-gas-shield arc welding. A study will be made of the equipment, operation, safety and practice in the various positions. A thorough study of such topics as: principles of operation, shielding gases, filler rods, process variations and applications, manual and automatic welding. Prerequisites: WLD 1120, WLD 1121.

FOURTH QUARTER

PSY 1101 Human Relations

3 0 0 3

A study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships within the work situation. Prerequisite: None.

MEC 1112 Machine Shop Processes

0 0 6 2

To acquaint the student with the procedures of layout work and the correct use of hand and machine tools. Experiences in the basic fundamentals of drill press and lathe operation; hand grinding of drill bits and lathe tools; set-up work applied to the trade. Prerequisite: None.

WLD 1113 Mechanical Testing and Inspection II

0 2 0 1

A continuation of WLD 1112 with special emphasis on mechanical testing of weld specimens.

WLD 1126 Advanced Inert Gas Welding

1 0 4 3

A continuation of WLD 1123. The student is given theory and practice in inert gas welding. Both ferrous and non-ferrous welding applications are covered. Inert spot welding, CO₂ welding, gas metal-arc, micro-wave pipe welding, plasma arc, and automatic welding are taught. Special consideration will be given to shielding gases and certification procedures.

WLD 1127 Introduction to Pipe Welding

3 0 12 7

Designed to provide practice in the welding of pressure piping in the horizontal, vertical and horizontal fixed positions using shielded metal arc welding processes according to the ASME code.

TECHNICAL CURRICULUMS

COURSE SEQUENCES AND DESCRIPTIONS

The two-year technical programs described below are organized on a six quarter basis, each quarter consisting of eleven weeks. The school year is composed of three consecutive quarters beginning in September and ending in early June. After the summer vacation, classes resume in September for the senior year. The graduate of these curriculums is awarded the associate of applied science degree.

AGRICULTURAL TECHNOLOGY - BUSINESS

Agriculture in the United States is undergoing major changes. A highly effective production machine, coupled with technological advances, is constantly eliminating the unprepared, the under capitalized and less efficient. These changes have given rise to the need for more technically trained people. The agricultural business curriculum combines studies in agriculture with intensive business training to prepare young men and women for the many and varied fields of employment in business and industry allied with agriculture.

DESCRIPTION OF PROGRAM

Successful completion of this program should enable an individual to find employment in such areas as plant supervision, management of farms supply stores, farm chemical supplies, field servicemen, inspection of farm products, office management, farm product marketing, farm management and agricultural research.

CURRICULUM BY QUARTERS

Course Title	Hours Per Week		Quarter Hours Credit
	Class	Lab.	
FIRST QUARTER			
T-ENG 101 Grammar	3	0	3
T-BUS 101 Introduction to Business	5	0	5
T-MAT 110 Business Mathematics	5	0	5
T-AGR 125 Animal Science	5	2	6
	—	—	—
	18	2	19
SECOND QUARTER			
T-ENG 102 Composition	3	0	3
T-AGR 185 Soil Science and Fertilizers	5	2	6
T-BUS 120 Accounting I	5	2	6
T-CHM 101 Chemistry	4	2	5
	—	—	—
	17	6	20
THIRD QUARTER			
T-ENG 103 Report Writing	3	0	3
T-BUS 110 Office Machines	2	2	3
T-BUS 121 Accounting II	5	2	6
T-AGR 170 Plant Science	5	2	6
	—	—	—
	15	6	18
FOURTH QUARTER			
T-ENG 204 Oral Communication	3	0	3
T-BUS 123 Business Finance	3	0	3
T-BUS 232 Sales Development	3	0	3
T-AGR 204 Farm Business Management	3	2	4
T-AGR Elective*	0	0	3
	—	—	—
	12	2	16

Course Title	Hours Per Week		Quarter Hours
	Class	Lab.	Credit
FIFTH QUARTER			
T-AGR 205 Agricultural Marketing	3	2	4
T-AGR 201 Agricultural Chemicals	5	2	6
T-ECO' 102 Economics	3	0	3
T-HRT 101 Introduction to Horticulture	5	2	6
	—	—	—
	16	6	19
SIXTH QUARTER			
T-AGR 228 Livestock Diseases and Parasites	3	2	4
T-AGR 218 Agricultural Mechanization	3	2	4
T-PSY 206 Applied Psychology	3	0	3
T-AGR Elective*	0	0	5
	—	—	—
	9	4	16

*At least six hours of electives should be in agricultural courses. Local institutions may add work experience to this curriculum.

COURSE DESCRIPTIONS

Course Title	Hours Per Week		Quarter Hours
	Class	Lab.	Credit
FIRST QUARTER			
T-ENG 101 Grammar	3	0	3
Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life. Prerequisite: None.			
T-BUS 101 Introduction to Business	5	0	5
A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management. Prerequisite: None.			
T-MAT 110 Business Mathematics	5	0	5
This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business. Prerequisite: None.			

T-AGR 125 Animal Science

5 2 6

An introductory animal science course covering the fundamental principles of livestock production. A study of the animal body and the basic principles of reproduction, genetics, growth, fattening, digestion, along with the selection, feeding, improvement, processing and marketing of livestock. Prerequisite: None.

T-AGR 170 Plant Science

5 2 6

SECOND QUARTER**T-ENG 102 Composition**

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition. Prerequisite: T-ENG 101.

T-AGR 185 Soil Science and Fertilizers

5 2 6

A course dealing with basic principles of efficient classification, evaluation, and management of soils; care, cultivation, and fertilization of the soil, and conservation of soil fertility. Prerequisite: None.

T-BUS 120 Accounting I

5 2 6

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: T-MAT 110.

T-CHM 101 Chemistry

4 2 5

Study of the physical and chemical properties of substances, chemical changes, elements, compounds, gases, chemical combinations, weights and measurements, theory of metals, acids, bases, salts, solvents, solutions, and emulsions. In addition, study of carbohydrates, electrochemistry, electrolytes, and electrolysis in their application of chemistry to industry. Prerequisite: T-MAT 110.

THIRD QUARTER**T-ENG 103 Report Writing**

3 0 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: T-ENG 102.

T-BUS 110	Office Machines	2	2	3
A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines, and calculator. Prerequisite: None.				

T-BUS 121 Accounting II **5** **2** **6**

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. Prerequisite: T-BUS 120.

An introductory general botany and crop science course covering the fundamental principles of the reproduction, growth, functions, and development of seed bearing plants with application to certain commercially important plants in North Carolina. Prerequisite: None.

FOURTH QUARTER

T-ENG 204	Oral Communication	3	0	3
A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews. Prerequisite: T-ENG 101.				

T-BUS 123	Business Finance	3	0	3
Financing of business units, as individuals, partnerships, corporations, and trusts. A detailed study is made of short-term, long-term, and consumer financing. Pre-req: MGT 101.				

T-BUS 232	Sales Development	3	0	3
A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required. Prerequisite: None				

T-AGR 204 Farm Business Management	3	2	4
A review of the functions of the manager of a business firm and the problems he faces. Development of the concept of planning by both partial and complete budgeting. Review of the concepts of costs and the length of run in production. Practice in preparing enterprise budgets as an aid in choosing what to produce. Use of partial budgeting to find the least cost production procedure that yields the most net revenue. Relationship between size, efficiency and income of a farm. Review of procedures for evaluating the efficiency of the manager. Prerequisite T-AGR 104			

FIFTH QUARTER**T-AGR 205 Agricultural Marketing** 3 2 4

An analysis of the functions of marketing in the economy and a survey of the problems marketing faces. A review of the market structure and the relationship of local, terminal, wholesale, retail and foreign markets. Problems in the operations of marketing firms including buying and selling, processing, standardization and grading, risk taking and storage, financing, efficiency, and cooperation. Discussion of procedures of marketing such commodities as grain, cotton, livestock, and tobacco. Prerequisite: None.

T-AGR 201 Agricultural Chemicals 5 2 6

A study of farm chemical pesticides, their ingredients, formulation, and farm application, with emphasis on the effective and safe use of chemicals in agricultural pest control. Prerequisite: None.

T-ECO 102 Economics 3 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Prerequisite: None.

T-HRT 101 Introduction to Horticulture 5 2 6

Attention will be directed to the basic principles involved in the application of these principles to the production, processing and utilization of fruit, vegetables, and ornamental crops. Attention will also be given to the economic importance and distribution of horticultural enterprises.

SIXTH QUARTER**T-AGR 228 Livestock Diseases and Parasites** 3 2 4

A course dealing with the common diseases and parasites of livestock; sanitation practices and procedures with emphasis on the cause, damage, symptoms, prevention and treatment of parasites and diseases, and management factors relating to disease and parasite prevention and control. Prerequisite: T-AGR 125.

T-AGR 218 Agricultural Mechanization 3 2 4

A study of farm machinery management and labor-saving devices. The economics of selection and operation of farm machinery. Study and evaluation of feed grinders, and mixers, storage facilities, materials handling systems and other labor-saving devices. Prerequisite: None.

A study of the principles of psychology that will be of assistance in the understanding of inter-personal relationships on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are: employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community. Prerequisite: None.

ORNAMENTAL HORTICULTURE

Horticulturists are concerned with orchard and garden plants such as fruits, nuts, vegetables, flowers and ornamental plants. They develop new or improved plant varieties and try to find better methods of growing, harvesting, storing, and transporting horticultural crops. This course of study is based upon an established need for technically trained personnel in the expanding areas of production, management and distribution of horticultural products.

DESCRIPTION OF PROGRAM

The Ornamental Horticulture program is designed to give students a good understanding of principles, techniques, and skills which are a necessary foundation for the independent, creative thinking essential to success in this field. Successful completion of this program should qualify individuals for employment in supervision of nurseries and plantings, greenhouse operation, work related to processing and distribution, management of garden shops, State and Federal Government agencies, supervision or maintainence of golf courses and sale of horticultural products.

CURRICULUM BY QUARTERS

Course Title	Hours Per Week		Quarter Hours Credit
	Class	Lab.	
FIRST QUARTER			
T-ENG 101 Grammar	3	0	3
T-BUS 101 Introduction to Business	5	0	5
T-MAT 110 Business Mathematics	5	0	5
T-AGR 170 Plant Science	5	2	6
	—	—	—
	18	2	19
SECOND QUARTER			
T-ENG 102 Composition	3	0	3
T-ECO 102 Economics	3	0	3
T-CHM 101 Chemistry	4	2	5
T-AGR 185 Soil Science and Fertilizers	5	2	6
T-AGR 150 General Horticulture	3	0	3
	—	—	—
	18	4	20
THIRD QUARTER			
T-ENG 103 Report Writing	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-AGR 180 Plant Pathology - Entomology	5	2	6
T-AGR 250 Fruit and Vegetable Production	3	2	4
T-AGR 255 Arboriculture	3	2	4
	—	—	—
	17	6	20

Course Title		Hours Per Week	Quarter Hours	
		Class	Lab.	Credit
FOURTH QUARTER				
T-ENG 204 Oral Communications	3	0	3	
T-BUS 232 Sales Development	3	0	3	
T-AGR 205 Agricultural Marketing	3	2	4	
T-AGR 152 Plant Propagation	5	2	6	
T-AGR 151 Plant Identification	2	2	3	
	—	—	—	
	16	6	19	
FIFTH QUARTER				
T-BUS 235 Business Management	3	0	3	
T-AGR 201 Agricultural Chemicals	5	2	6	
T-AGR 254 Greenhouse Management	2	4	4	
T-AGR 251 Landscape Design	2	4	4	
	—	—	—	
	12	10	17	
SIXTH QUARTER				
T-BUS 272 Principles of Supervision	3	0	3	
T-AGR 253 Landscape Gardening	3	2	4	
T-AGR 257 Nursery Practices	3	2	4	
T-AGR 258 Turf Practices	1	2	2	
T-AGR Elective	3	2	4	
	—	—	—	
	13	8	17	

COURSE DESCRIPTIONS

Course Title		Hours Per Week	Quarter Hours	
		Class	Lab.	Credit
FIRST QUARTER				
T-ENG 101 Grammar	3	0	3	
Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life. Prerequisite: None.				
T-BUS 101 Introduction to Business	5	0	5	
A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management. Prerequisite: None.				
T-MAT 110 Business Mathematics	5	0	5	
This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business. Prerequisite: None.				

T-AGR 170 Plant Science

5 2 6

An introductory general botany and crop science course covering the fundamental principles of the reproduction, growth, functions, and development of seed bearing plants with application to certain commercially important plants in North Carolina. Prerequisite: None.

SECOND QUARTER**T-ENG 102 Composition**

3 0 3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition. Prerequisite: T-ENG 101.

T-ECO 102 Economics

3 0 3

The fundamental principles of economics including the institution and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Prerequisite: None.

T-CHM 101 Chemistry

4 2 5

Study of the physical and chemical properties of substances, chemical changes; elements, compounds, gases, chemical combinations; weights and measurements; theory of metals; acids, bases, salts, solvents, solutions, and emulsions. In addition, study of carbohydrates; electrochemistry, electrolytes, and electrolysis in their application of chemistry to industry. Prerequisite: T-MAT 110.

T-AGR 185 Soil Science and Fertilizers

5 2 6

A course dealing with basic principles of efficient classification, evaluation, and management of soils; care, cultivation, and fertilization of the soil, and conservation of soil fertility. Prerequisite: None.

T-AGR 150 General Horticulture

3 0 3

A course dealing with horticulture principles and the application of plant science fundamentals to horticultural practices. Prerequisite: T-AGR 170.

THIRD QUARTER**T-ENG 103 Report Writing**

3 0 3

The fundaments of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: T-ENG 102.

T-PSY 206 Applied Psychology

3 0 3

A study of the principles of psychology that will be of assistance in the understanding of inter-personal relationships on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are: employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

T-AGR 190 Plant Pathology - Entomology

5 2 6

The nature, structure, growth, habits, and injurious effects of diseases and insects. The identification of common plant pests, diseases, and their injuries in the field. Control measures for common diseases and insects.

T-AGR 250 Fruit and Vegetable Production

3 2 4

A course dealing with fruit and vegetable production. A study of the importance and principles of production and marketing of the major vegetable crops. Identification and methods of production and marketing of the principal tree and small fruits. Prerequisite: T-AGR 150, T-AGR 152.

T-AGR 255 Arboriculture

3 2 4

Principles and practices of selection, use, establishment and care of shade and ornamental trees. Prerequisite: None.

FOUTH QUARTER**T-ENG 204 Oral Communication**

3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews. Prerequisite: T-ENG 101.

T-BUS 232 Sales Development

3 0 3

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required. Prerequisite: None.

T-AGR 205 Agricultural Marketing

3 2 4

An analysis of the functions of marketing in the economy and a survey of the problems marketing faces. A review of the market structure and the relationship of local, terminal, wholesale, retail and foreign markets. Problems in the operations of marketing firms including buying and selling, processing, standardization and grading, risk taking and storage, financing, efficiency, and cooperation. Discussion of procedures of marketing such commodities as grain, cotton, livestock and tobacco. Prerequisite: T-AGR 104.

T-AGR 152 Plant Propagation 5 2 6

A study of the principles, methods and facilities for plant propagation.

T-AGR 151 Plant Identification 2 2 3

Identification, adaptation and use of ornamental plants. Prerequisite: None.

FIFTH QUARTER

T-BUS 235 Business Management 3 0 3

Principles of business management including overview of major functions of management, such as planning, staffing, controlling, directing, and financing. Clarification of the decision-making function versus the operating function. Role of management in business—qualifications and requirements. Prerequisite: None.

T-AGR 201 Agricultural Chemicals 5 2 6

A study of farm chemical pesticides, their ingredients, formulation, and farm application, with emphasis on the effective and safe use of chemicals in agricultural pest control. Prerequisite: None.

T-AGR 254 Greenhouse Management 2 2 4

Fundamentals of and practices in greenhouse plant production.

T-AGR 251 Landscape Design 2 4 4

To develop an understanding of the principles and practices of landscape design with application to selected landscape problems. On-the-job sketching and plan presentation as done by the nurseries. Planning of small home grounds as well as problems of design and construction dealing with grading, walls, steps and other garden accessories.

SIXTH QUARTER

T-BUS 272 Principles of Supervision 3 0 3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed. Prerequisite: None.

T-AGR 253 Landscape Gardening 3 2 4

Maintenance of landscape areas including planting, pruning, fertilization and pest control. Landscape economics: costs, contracts, calculating areas, volumes, and plant quantities for landscape projects. Selection and use of materials in landscape construction. Prerequisite: None.

T-AGR 257 Nursery Practices

3 2 4

Retail and wholesale nursery practices. Layouts, selling, handling of plant materials. Commercial nursery stock production dealing with plant growth patterns and plant responses in relation to soils, water, fertility, planting techniques and distances, top and root pruning. Plant production cycles, rotations, and kind of treatment for economy production. Prerequisite: None.

T-AGR 258 Turf Practices

1 2 2

A study of turf grasses including identification, seeding establishment, use and maintenance. Prerequisite: None.

BUSINESS ADMINISTRATION

Since shortly after World War II it has been recognized that the distribution of goods is the largest single problem in business. Techniques for mass production of goods have been perfected and knowledge of better ways to get these products to the consumer is needed. The student of Business Administration is preparing for employment in the field of distribution which, directly or indirectly, produces over one-half of all jobs today.

Jobs available in this locality which graduates would be qualified to fill are in the areas of retailing, wholesaling, industrial marketing, finance, and service industries. Services performed by graduates in Business Administration include sales, advertising, merchandising, buying, credit, and personnel. The highest paid non-managerial jobs, and the greatest number of job offerings at the managerial level are found in the field of Business Administration. Close to 4½ million salaried workers were employed to manage the business activities of the nation's enterprises, and employment in this field of work is expected to expand considerably through the mid 1970's.

DESCRIPTION OF PROGRAM

The business administration program at Forsyth Technical Institute may be completed on a full-time basis in six quarters, or in a proportionately longer time on a part-time schedule. (The latter is recommended for students who must work to supplement income.)

The business administration program is designed to (1) develop the student's knowledge of the fundamental principles of marketing and distribution in today's economy, and to provide them with an understanding of the principles of organization and management in business operations; (2) develop skills in selling, advertising, and analysis; (3) familiarize the student with growth problems confronting business today and the position trained people can take in the solution of these problems.

CURRICULUM BY QUARTERS

Course Title		Hours Per Week			Quarter Hours
		Class	Lab.	Credit	
FIRST QUARTER					
T-ENG 101	Grammar	3	0	3	
T-BUS 102	Typewriting (or Elective)	2	3	3	
T-MAT 110	Business Mathematics	5	0	5	
T-BUS 101	Introduction to Business	5	0	5	
T-ECO 102	Economics	3	0	3	
		—	—	—	
		18	3	19	

Course Title		Hours Per Week	Quarter Hours	Credit
		Class	Lab.	
SECOND QUARTER				
T-ENG 102 Composition		3	0	3
T-BUS 120 Accounting I		5	2	6
T-ECO 104 Economics		3	0	3
T-BUS 115 Business Law I		3	0	3
T-BUS 232 Sales Development		3	0	3
		—	—	—
		17	2	18
THIRD QUARTER				
T-ENG 103 Report Writing		3	0	3
T-BUS 123 Business Finance I		3	0	3
T-BUS 110 Office Machines		2	2	3
T-BUS 121 Accounting II		5	2	6
T-BUS 116 Business Law II		3	0	3
		—	—	—
		16	4	18
FOURTH QUARTER				
T-ENG 204 Oral Communications		3	0	3
T-BUS 124 Business Finance II		3	0	3
T-EDP 104 Introduction to Data Processing Systems		3	2	4
T-BUS 239 Marketing		5	0	5
T-BUS 235 Business Management		3	0	3
		—	—	—
		17	2	18
FIFTH QUARTER				
T-ENG 206 Business Communications		3	0	3
T-PSY 206 Applied Psychology		3	0	3
T-BUS 243 Advertising		3	2	4
T-BUS Elective		3	0	3
T-BUS Elective		3	0	3
		—	—	—
		15	2	16
SIXTH QUARTER				
T-SSC 205 American Institutions		3	0	3
T-BUS 229 Taxes		3	2	4
T-BUS 272 Principles of Supervision		3	0	3
T-BUS 271 Office Management		3	0	3
T-BUS Elective		6	0	6
		—	—	—
		18	2	19

COURSE DESCRIPTIONS

Course Title		Hours Per Week	Quarter Hours	Credit
		Class	Lab.	
FIRST QUARTER				
T-ENG 101 Grammar		3	0	3
Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life. Prerequisite: None.				

T-BUS 102 Typewriting 2 3 3

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts. Prerequisite: None.

T-MAT 110 Business Mathematics 5 0 5

This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business. Prerequisite: None.

T-BUS 101 Introduction to Business 5 0 5

A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management. Prerequisite: None.

T-ECO 102 Economics 3 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Prerequisite: None.

SECOND QUARTER

T-ENG 102 Composition 3 0 3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition. Prerequisite: T-ENG 101.

T-BUS 120 Accounting I 5 2 6

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: T-MAT 110.

T-ECO 104 Economics 3 0 3

Greater depth in principles of economics, including a penetration into the composition and pricing of national output, distribution of income, international trade and finance, and current economic problems. Prerequisite: T-ECO 102.

T-BUS 115 Business Law I 3 0 3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies. Prerequisite: None.

T-BUS 232 Sales Development 3 0 3

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required. Prerequisite: None.

THIRD QUARTER

T-ENG 103 Report Writing 3 0 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: T-ENG 102.

T-BUS 123 Business Finance I 3 0 3

Financing of business units, as individuals, partnerships, corporations, and trusts. A detailed study is made of short-term, long-term, and consumer financing. Prerequisite: None.

T-BUS 110 Office Machines 2 2 3

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines, and calculator. Prerequisite: None.

T-BUS 121 Accounting 5 2 6

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. Prerequisite: T-BUS 120.

T-BUS 116 Business Law II 3 0 3

Includes the study of laws pertaining to bailment, sales, risk-bearing, partnership-corporation, mortgages, and property rights. Prerequisite: T-BUS 115.

FOURTH QUARTER

T-ENG 204 Oral Communication 3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews. Prerequisite: T-ENG 101.

T-BUS 124 Business Finance II 3 0 3

Financing, federal, state, and local government and the ensuing effects upon the economy. Factors affecting supply of funds, monetary and credit policies. Prerequisite: T-BUS 123.

T-EDP 104 Introduction to Data Processing Systems 3 2 4

Fundamental concepts and operational principles of data processing systems, as an aid in developing a basic knowledge of computers, prerequisite to the detailed study of particular computer problems. This course is a prerequisite for all programming courses. Prerequisite: None.

T-BUS 239 Marketing 5 0 5

A general survey of the field of marketing, with a detailed study of the functions, policies, and institutions involved in the marketing process. Prerequisite: None.

T-BUS 235 Business Management 3 0 3

Principles of business management including overview of major functions of management, such as planning, staffing, controlling, directing, and financing. Clarification of the decision-making function versus the operating function. Role of management in business—qualifications and requirements. Prerequisite: None.

FIFTH QUARTER

T-ENG 206 Business Communications 3 0 3

Develops skills in techniques in writing business communications. Emphasis is placed on writing action—getting sales letters and prospectuses. Business reports, summaries of business conferences, letters involving credit, collections, adjustments, complaints, orders, acknowledgements, remittances, and inquiry. Prerequisite: T-ENG 102.

T-PSY 206 Applied Psychology 3 0 3

A study of the principles of psychology that will be of assistance in the understanding of inter-personal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are: employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community. Prerequisite: None.

T-BUS 243 Advertising 3 2 4

The role of advertising in a free economy and its place in the media of mass communications. A study of advertising appeals; product and market research; selection of media; means of testing effectiveness of advertising. Theory and practice of writing advertising copy for various media. Prerequisite: None.

SIXTH QUARTER

T-SSC 205 American Institutions 3 0 3

A study of the effect of American social, economic, and political institutions upon the individual as a citizen and as a worker. The course dwells upon current local, national, and global problems viewed in the light of our political and economic heritage. Prerequisite: None.

T-BUS 229 Taxes

3 2 4

Application of federal and state taxes to various businesses and business conditions. A study of the following taxes: income, payroll, intangible, capital gain, sales and use, excise, and inheritance. Prerequisite: T-BUS 121.

T-BUS 272 Principles of Supervision

3 0 3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed. Prerequisite: None.

T-BUS 271 Office Management

3 0 3

Presents the fundamental principles of office management. Emphasis on the role of office management including its functions, office automation, planning, controlling, organizing and actuating office problems. Prerequisite: None.

DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

Drafting is the language of industrial production, and draftsmen and designers are the language experts in this field. The technical draftsman is responsible for the design and graphical representation of the processes and materials of production. Individuals employed in more than 50 occupations in this field are directly associated with engineering departments and are expected to use creative imagination in the design of tools, machines and machine parts which will facilitate production of goods. This new and rapidly expanding field of employment offers opportunities and salaries which compare favorably with those in any other technical area in this nation and in a number of foreign countries.

DESCRIPTION OF PROGRAM

The drafting and design program at Forsyth Technical Institute is designed to give the student an extensive background in the fundamentals of drafting and an understanding of the application of these principles to the design of machines, tools, dies, fixtures, cams, and gears. The course also provides a knowledge of manufactured products and valuable information for those interested in selling metal products. Emphasis is placed upon the ability to think and plan and not merely upon drafting techniques.

CURRICULUM BY QUARTERS

Course Title	Hours Per Week			Quarter Hours
	Class	Lab.	Shop	Credit
FIRST QUARTER				
T-ENG 101 Grammar	3	0	3	
T-MAT 101 Technical Mathematics	5	0	5	
T-PHY 101 Physics: Properties of Matter	3	2	4	
T-DFT 101 Technical Drafting	2	6	4	
T-MEC 101 Machine Processes	0	6	2	
	—	—	—	
	13	14	18	
SECOND QUARTER				
T-ENG 102 Composition	3	0	3	
T-MAT 102 Technical Mathematics	5	0	5	
T-PHY 102 Physics: Work, Energy, Power	3	2	4	
T-DFT 102 Technical Drafting	2	6	4	
T-MEC 102 Machine Processes	0	6	2	
	—	—	—	
	13	14	18	

Course Title	Hours Per Week		Quarter Hours	
	Class	Lab.	Credit	
THIRD QUARTER				
T-ENG 204 Oral Communication	3	0	3	
T-MAT 103 Technical Mathematics	5	0	5	
T-PHY 103 Physics: Electricity	3	2	4	
T-PHY 106 Applied Mechanics	5	0	5	
T-DFT 103 Technical Drafting	0	8	3	
	—	—	—	
	16	10	20	
FOURTH QUARTER				
T-ENG 103 Report Writing	3	0	3	
T-DFT 201 Technical Drafting	2	6	4	
T-DFT 204 Descriptive Geometry	2	4	4	
T-MEC 205 Strength of Materials	3	2	4	
T-MEC 210 Physical Metallurgy	3	3	4	
	—	—	—	
	13	15	19	
FIFTH QUARTER				
T-DFT 205 Design Drafting I	2	6	4	
T-MEC 235 Hydraulics & Pneumatics	3	3	4	
T-DFT 211 Mechanisms	3	2	4	
T-MEC 211 Physical Metallurgy	3	3	4	
T-ELN 201 Industrial Controls	3	2	4	
	—	—	—	
	14	16	20	
SIXTH QUARTER				
T-ISC 201 Industrial Organization and Management	3	0	3	
T-ECO 102 Economics	3	0	3	
T-DFT 206 Design Drafting II	2	6	4	
T-DFT 212 Jig and Fixture Design	2	4	4	
T-MEC 237 Control Systems	2	4	4	
	—	—	—	
	12	14	18	

COURSE DESCRIPTIONS

Course Title	Hours Per Week		Quarter Hours
	Class	Lab.	Credit
FIRST QUARTER			
T-ENG 101 Grammar	3	0	3
Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.			
T-MAT 101 Technical Mathematics	5	0	5
The real number system is developed as an extension of natural numbers. Number systems of various bases are introduced. Fundamental algebraic operations, the rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed. Prerequisite: Satisfactory evidence that admission requirements have been met.			

T-PHY 101 Physics: Properties of Matter 3 2 4

A fundamental course covering several basic principles of physics. The divisions included are solids and their characteristics, liquids at rest and in motion, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course. Prerequisite: MAT pre-test, co-req T-MAT 101.

T-DFT 101 Technical Drafting 2 6 4

The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced.

T-MEC 101 Machine Processes 0 6 2

An introductory course designed to acquaint the student with basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring, and reaming.

SECOND QUARTER

T-ENG 102 Composition 3 0 3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition. Prerequisite: T-ENG 101.

T-MAT 102 Technical Mathematics 5 0 5

A continuation of T-MAT 101. Advanced algebraic and trigonometric topics including quadratics, logarithms, determinants, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions are studied in depth. Prerequisite: T-MAT 101.

T-PHY 102 Physics: Work, Energy, Power 3 2 4

The major areas covered in this course are work, energy, and power. Instruction includes such topics as statics, forces, center of gravity, and dynamics. Units of measurement and their applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas. Prerequisite: T-PHY 101, T-MAT 101, co-req T-MAT 102.

T-DFT 102 Technical Drafting 2 6 4

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphical analysis of space problems. Problems of practical design elements involving points, lines, planes, and a combination of these elements will be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and development of various types of geometrical objects. Prerequisite: T-DFT 101.

T-MEC 102 Machine Processes

0 6 2

Advanced operations on lathe, drilling, boring and reaming machines. Milling machine theory and practice. Thorough study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed. Prerequisite: T-MEC 101.

THIRD QUARTER**T-ENG 204 Oral Communication**

3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews. Prerequisite: T-ENG 101.

T-MAT 103 Technical Mathematics

5 0 5

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Applications of these concepts to practical situations are stressed. Prerequisite: T-MAT 101.

T-PHY 103 Physics: Electricity

3 2 4

Basic theories of electricity, types of electricity, methods of production, and transmission and transforming of electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magnetism, induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course. Prerequisites: T-PHY 101, T-MAT 101, co-req T-MAT 102.

T-PHY 106 Applied Mechanics

5 0 5

Concepts and principles of statics and dynamics. Parallel concurrent and non-concurrent force systems in coplanar and noncoplanar situations. Concepts of centroids and center of gravity, moments of inertia, fundamentals of kinetics, and kinematics of velocity and motion. Prerequisites: T-MAT 102, T-PHY 102.

T-DFT 103 Technical Drafting

0 8 3

Intersection and developments and their practical solutions. Where applicable, model solutions accompany the problems. The various techniques employed to produce and render isometric and oblique drawings, isometric, dimetric and trimetric projections, will be included. Prerequisite: T-DFT 102.

FOURTH QUARTER**T-ENG 103 Report Writing**

3 0 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: T-ENG 102.

T-DFT 201 Technical Drafting

2 6 4

Applications and constructions of charts, graphs, and nomographs in engineering and technical data. Screw threads, springs, keys, rivets, piping, and welding symbols, methods of representing and specifying will be covered. Basic mechanisms of motion transfer, gears, and cams, will be studied and drawn with emphasis on methods of specifying, calculating, dimensions, and delineating. Prerequisite: T-DFT 103.

T-DFT 204 Descriptive Geometry 2 4 4

Graphic analysis of space problems involving points, lines, planes, connectors, and a combination of these. Practical design problems will be stressed with analytical verification where applicable. Visualization will be stressed on every problem. Prerequisites: T-DFT 102, T-MAT 102.

T-MEC 205 Strength of Materials 3 2 4

Study of principles and analysis of stresses which occur within machine and structure elements subjected to various types of loads such as static, impact, varying and dynamic. Analyses of these stresses are made as applied to thin-walled cylinders and spheres, riveted and welded joints, beams, columns and machine components. Prerequisites: T-PHY 106, T-MAT 103.

T-MEC 210 Physical Metallurgy 3 3 4

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, and nuclear reactions. Solid (crystalline) structures, methods of designating crystal planes; liquid and vapor phases; phase diagrams; and alloy systems. Prerequisite: T-PHY 101.

FIFTH QUARTER**T-DFT 205 Design Drafting I** 2 6 4

Basic design is introduced in the study of motion transfer mechanisms as they relate to power trains. Principles of design sketching, design drawing, layout drafting, detailing from layouts, production drawings and simplified drafting practices constitute areas of study. Types and methods of specifying materials and workmanship are an integral part of the course. Prerequisites: T-DFT 204, T-MAT 102, T-PHY 102.

T-MEC 235 Hydraulics and Pneumatics 3 3 4

The basic theories of hydraulic and pneumatic systems. Combinations of systems in various circuits. Basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs. Prerequisite: T-PHY 102.

T-DFT 211 Mechanisms 3 2 4

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkages, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears and gear trains. Prerequisites: T-DFT 201 & 204, T-MAT 103, T-PHY 106.

T-MEC 211 Physical Metallurgy 3 3 4

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bonding and homogenization; recrystallization and grain growth, age hardening, nitriding, internal oxidation; heat treatment of steel; laboratory experiments and demonstrations. Prerequisite: T-MEC 210.

T-ELN 201 Industrial Controls 3 2 4

Industrial controls is the study of modern methods of controlling machinery by electronic circuitry. Machinery controls and electronic mechanisms that automatically operate machines will be studied. Types of motors, generators, control signals and devices, thyratrons, gates, switches, and servomechanism circuits are major areas of study. Prerequisite: T-PHY 103.

SIXTH QUARTER

T-ISC 201 Industrial Organization and Management	3	0	3
Organizational structure for industrial management; operational and financial activities, including accounting, budgeting, banking, credit and industrial risk, forecasting of markets, selection and layout of physical facilities; selection, training and supervision of personnel as found in typical industrial organizations. Prerequisite: None.			
T-ECO 102 Economics	3	0	3
The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large.			
T-DFT 206 Design Drafting II	2	6	4
Research to solve a problem in design by consulting various manuals, periodicals, and through laboratory experiments. A written technical report, preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings, pictorial drawings, exploded pictorial assembly, patent drawings and specifications are required as a part of the problem. Prerequisites: T-DFT 205, T-DFT 210.			
T-DFT 212 Jig and Fixture Design	2	4	4
Commercial standards, principles, practices and tools of jig and fixture design. Individual project and design work to acquaint students with the types of jigs and fixtures and their design. Prerequisite: None.			
T-MEC 237 Control Systems	2	4	4
Hydraulic, pneumatic, mechanical, electrical and electronic control systems and components. Basic description, analysis and explanation of operation. Typical performance characteristics, limitations on performance, accuracy, applications and their utilization in industrial processes. Prerequisites: T-PHY 102, T-ELC 201.			

ELECTRONICS TECHNOLOGY

Thousands of challenging new job opportunities have opened up for electronics technicians since the advent of missiles, automation, microwave telephone relays, radar electronic controls, transistors and scores of other electronic inventions and developments. The individual who expects to work in this field must acquire the knowledge and skills which will enable him to assist engineers in building, testing and modifying electronic apparatus; in following drawings, sketches and verbal instructions.

DESCRIPTION OF PROGRAM

Forsyth Technical Institute is well equipped to meet the challenge of industry to train electronics technicians. The Institute affords a wide variety of course offerings and well planned class and laboratory sessions which carry the student step-by-step through all the basic concepts to the most advanced developments in the field of electronics.

CURRICULUM BY QUARTERS

Course Title	Hours Per Week			Quarter Hours Credit
	Class	Lab.		
FIRST QUARTER				
T-ENG 101 Grammar	3	0		3
T-MAT 101 Technical Mathematics	5	0		5
T-PHY 101 Physics: Properties of Matter	3	2		4
T-DFT 101 Technical Drafting	2	6		4
T-ELC 101 Fundamentals of Electricity	4	6		6
	—	—		—
	17	14		22
SECOND QUARTER				
T-ENG 102 Composition	3	0		3
T-MAT 102 Technical Mathematics	5	0		5
T-PHY 102 Physics: Work, Energy, Power	3	2		4
T-ELC 102 Fundamentals of Electricity	5	6		8
	—	—		—
	16	8		20
THIRD QUARTER				
T-ENG 103 Report Writing	3	0		3
T-MAT 103 Technical Mathematics	5	0		5
T-ELN 101 Instruments and Measurements	1	4		3
T-ELN 105 Control Devices	5	6		8
	—	—		—
	14	10		19
FOURTH QUARTER				
T-ENG 204 Oral Communication	3	0		3
T-MAT 201 Technical Mathematics	5	0		5
T-PHY 104 Physics: Light and Sound	3	2		4
T-ELN 205 Applications of Vacuum Tubes and Transistors	5	4		7
	—	—		—
	16	6		19

Course Title		Hours Per Week	Quarter Hours	
		Class	Lab.	Credit
FIFTH QUARTER				
T-ECO 102 Economics		3	0	3
T-ELN 210 Semiconductor Circuit Analysis		5	4	7
T-ELN 214 Wave Shaping and Pulse Circuits		2	2	3
T-ELN Elective		4	6	7
		—	—	—
SIXTH QUARTER		14	12	20
T-PSY 206 Applied Psychology		3	0	3
T-ELN 215 Wave Shaping and Pulse Circuits		2	4	4
T-ELN 220 Electronic Systems		5	2	6
T-ELN Elective		4	6	7
		—	—	—
		14	12	20

COURSE DESCRIPTIONS

Course Title		Hours Per Week	Quarter Hours	
		Class	Lab.	Credit
FIRST QUARTER				
T-ENG 101 Grammar		3	0	3
Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life. Prerequisite: None.				
T-MAT 101 Technical Mathematics		5	0	5
The real number system is developed as an extension of natural numbers. Number systems of various bases are introduced. Fundamental algebraic operations, the rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed. Prerequisite: Satisfactory evidence that admission requirements have been met.				
T-PHY 101 Physics: Properties of Matter		3	2	4
A fundamental course covering several basic principles of physics. The divisions included are solids and their characteristics, liquids at rest and in motion, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course. Prerequisite: None.				
T-DFT 101 Technical Drafting		2	6	4
The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced. Prerequisite: None.				
T-ELC 101 Fundamentals of Electricity		4	6	6
Elementary principles of electricity including: basic electric units, Ohms law, Kirchhoff's law, network theorems, magnetics, basic electrical measuring instruments, inductance, capacitance, sine wave analysis, and non-resonant resistive, inductive and capacitive networks. Prerequisite: None.				
SECOND QUARTER				
T-ENG 102 Composition		3	0	3
Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition. Prerequisite: T-ENG 101.				

T-MAT 102 Technical Mathematics 5 0 5

A continuation of T-MAT 101. Advanced algebraic and trigonometric topics including quadratics, logarithms, determinants, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions are studied in depth. Prerequisite: T-MAT 101.

T-PHY 102 Physics: Work, Energy, Power 3 2 4

Major areas covered in this course are work, energy, and power. Instruction includes such topics as statics, forces, center of gravity and dynamics. Units of measurement and their applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas. Prerequisites: T-MAT 101, T-PHY 101.

T-ELC 102 Fundamentals of Electricity 5 6 8

Series and parallel resonant-circuit analysis, resonant and non-resonant transformer analysis, basic diode power supply analysis, introduction to non-linear resistive control devices, and introduction to electromechanical devices. Prerequisite: T-ELC 101.

THIRD QUARTER

T-ENG 103 Report Writing 3 0 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: T-ENG 102.

T-MAT 103 Technical Mathematics 5 0 5

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Applications of these concepts to practical situations are stressed. Prerequisite: T-MAT 102.

T-ELN 101 Electronic Instruments and Measurements 1 4 3

A study of basic electronic instruments, their theory of operation, function, tolerances, and calibration. Both service and laboratory instruments will be studied. Laboratory experience will provide application of each type instrument studied. Prerequisite: T-ELC 102.

T-ELN 105 Control Devices 5 6 8

A study in depth of the electrical characteristics of vacuum tubes and transistors. Basic parameters and applications of each type device to the three configurations of a three terminal two port system will be included: Prerequisite: T-ELC 102.

FOURTH QUARTER

T-ENG 204 Oral Communication 3 0 3

A study of basic concepts and principles of oral communication to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews. Prerequisite: T-ENG 101.

T-MAT 201 Technical Mathematics 5 0 5
A continuation of T-MAT 103. More advanced concepts of differentiation and integration are considered. Included are graphs and derivatives of the trigonometric functions, exponential and logarithmic differentiation and integration, advanced integration techniques, polar equations, parametric equations, and Fourier series. Prerequisite: T-MAT 103.

T-PHY 104 Physics: Light and Sound 3 2 4
A survey of the concepts involving wave motion leads to a study of sound, its generation, transmission and detection. The principles of wave motion also serve as an introduction to a study of light, illumination and the principles involved in optical instruments. Application is stressed throughout. Prerequisites: T-MAT 102, T-PHY 102.

T-ELN 205 Applications of Vacuum Tubes and Transistors 5 4 7
Practical applications of vacuum tubes and transistors to basic audio amplifiers, radio frequency amplifiers, detectors, modulators and oscillators, Prerequisite: T-ELN 105.

FIFTH QUARTER

T-ELN 210 Semiconductor Circuit Analysis 5 4 7
A study in depth of the analysis and design of transistor circuits. Network theorems and equivalent circuits are used extensively in evaluating total circuit performance. Device peculiarities and limitations pertinent to reliable operations are considered. H. Y. Z. and T. parameters are employed as well as signal-flow graphs. Prerequisite: T-ELN 105.

T-ELN 214 Wave Shaping and Pulse Circuits 2 2 3
Broadband amplifiers, magnetic amplifiers, multivibrators, wave shaping techniques, chopper amplifiers, clipper and clamper circuits. Prerequisites: T-ELN 105, T-MAT 103.

T-ECO 102 Economics 3 0 3
The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large.

SIXTH QUARTER

T-ELN 215 Wave Shaping and Pulse Circuits 2 4 4
Pulse techniques, diode switches, gates, step-counters, restorers and other specific circuits which function as switches. Prerequisite: T-ELN 214.

T-ELN 220 Electronic Systems 5 2 6
A block diagram course investigating numerous electronic systems. Modules or blocks of various circuits already studied are arranged in various manners to produce complex electronic systems. Systems will be explained and reduced to functions and then to block diagrams. AM, FM, and Single Sideband transmitters and receivers, multiplexing, TV transmitters and receivers, pulse-modulated systems, computers, telemetry, navigational systems, sonar and radar will be considered. Corequisite: T-ELN 215.

T-PSY 206 Applied Psychology 3 0 3
A study of the principles of psychology that will be of assistance in the understanding of inter-personal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are: employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community. Prerequisite: None.

EXECUTIVE SECRETARIAL SCIENCE

About two million individuals were employed in 1965 in occupations requiring stenographic skills. More than 95 per cent were women. Practically all secretaries record dictation and transcribe it on the typewriter. Usually they have additional duties related to the nature of the employer's business; and sometimes they have special job titles which reflect skill levels or job specialties. In addition to their stenographic work secretaries usually relieve employers of routine duties and frequently handle a variety of business details on their own initiative. Employment opportunities are rapidly increasing and are expected to be excellent through the middle 1970's.

DESCRIPTION OF PROGRAM

The two year program of studies provides instruction in all phases of secretarial work, including the operation of the most up-to-date office machines. Satisfactory completion of these courses of instruction will qualify a graduate to obtain employment in manufacturing firms, banks, insurance companies, schools, colleges, hospitals, government agencies, and many other fields too numerous to list.

CURRICULUM BY QUARTERS

Course Title	Hours Per Week		Quarter Hours Credit
	Class	Lab.	
FIRST QUARTER			
T-ENG 101 Grammar	3	0	3
T-BUS 102 Typewriting (Or Elective)	2	3	3
T-MAT 110 Business Mathematics	5	0	5
T-BUS 101 Introduction to Business	5	0	5
T-BUS 106 Shorthand (Or Elective)	3	2	4
	—	—	—
	18	5	20
SECOND QUARTER			
T-ENG 102 Composition	3	0	3
T-BUS 103 Typewriting (Or Elective)	2	3	3
T-BUS 107 Shorthand	3	2	4
T-BUS 120 Accounting	5	2	6
T-BUS 115 Business Law	3	0	3
	—	—	—
	16	7	19
THIRD QUARTER			
T-ENG 103 Report Writing	3	0	3
T-BUS 104 Typewriting	2	3	3
T-BUS 108 Shorthand	3	2	4
T-BUS 110 Office Machines	2	2	3
T-BUS 112 Filing	3	0	3
	—	—	—
	13	7	16

Course Title		Hours Per Week	Quarter Hours Credit
	Class	Lab.	
FOURTH QUARTER			
T-ENG 204 Oral Communication	3	0	3
T-BUS 206E Dictation and Transcription (Executive)	3	2	4
T-BUS 205 Advanced Typewriting	2	3	3
T-BUS 211 Office Machines	2	2	3
T-EDP 104 Introduction to Data Processing Systems	3	2	4
	—	—	—
	13	9	17
FIFTH QUARTER			
T-ENG 206 Business Communication	3	0	3
T-BUS 207E Dictation and Transcription (Executive)	3	2	4
T-BUS 214 Secretarial Procedures	3	2	4
T-PSY 112 Personality Development	3	0	3
T-BUS Elective	6	0	6
	—	—	—
	18	4	20
SIXTH QUARTER			
T-SSC 205 American Institutions	3	0	3
T-BUS 208E Dictation and Transcription (Executive)	3	2	4
T-BUS 271 Office Management	3	0	3
T-BUS Elective	6	0	6
	—	—	—
	15	2	16

COURSE DESCRIPTIONS

Course Title		Hours Per Week	Quarter Hours Credit
	Class	Lab.	
FIRST QUARTER			
T-ENG 101 Grammar	3	0	3
Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life. Prerequisite: None.			
T-BUS 102 Typewriting	2	3	3
Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts. Prerequisite: None.			
T-MAT 110 Business Mathematics	5	0	5
This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business. Prerequisite: None.			

T-BUS 101 Introduction to Business

5 0 5

A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management. Prerequisite: None.

T-BUS 106 Shorthand

3 2 4

A beginning course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms, and phrases. Prerequisite: None.

SECOND QUARTER**T-ENG 102 Composition**

3 0 3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition. Prerequisite: T-ENG 101.

T-BUS 103 Typewriting

2 3 3

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscripts, correspondence, and business forms. Prerequisite: T-BUS 102 or the equivalent. Speed requirement, 30 words per minute for five minutes.

T-BUS 107 Shorthand

3 2 4

Continued study of theory with greater emphasis on dictation and elementary transcription. Prerequisite: T-BUS 106 or the equivalent.

T-BUS 120 Accounting

5 2 6

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: T-MAT 110.

T-BUS 115 Business Law I

3 0 3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies. Prerequisite: None.

THIRD QUARTER**T-ENG 103 Report Writing**

3 0 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: T-ENG 102.

T-BUS 104 Typewriting 2 3 3
Emphasis on production typing problems and speed building. Attention to the development of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscript, correspondence, and business forms. Prerequisite: T-BUS 103 or the equivalent. Speed requirement, 40 words per minute for five minutes.

T-BUS 108 Shorthand 3 2 4
Theory and speed building. Introduction to office style dictation. Emphasis on development of speed in dictation and accuracy in transcription. Prerequisite: T-BUS 107.

T-BUS 110 Office Machines 2 2 3
A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines, and calculator. Prerequisite: None.

T-BUS 112 Filing 3 0 3
Fundamentals of indexing and filing, combining theory and practice by the use of miniature letters, filing boxes and guides. Alphabetic, Triple Check, Automatic, Geographic, Subject, Soundex, and Dewey Decimal filing. Prerequisite: None.

FOURTH QUARTER

T-ENG 204 Oral Communication 3 0 3
A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews. Prerequisite: T-ENG 101.

T-BUS 206E Dictation and Transcription (Executive) 3 2 4
Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed. Minimum dictation rate of 100 words per minute required for five minutes on new material. Prerequisite: T-BUS 108.

T-BUS 205 Advanced Typewriting 2 3 3
Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work appropriate to the field of study. These projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts and legal documents. Prerequisite: T-BUS 104. Speed requirement, 50 words per minute for five minutes.

T-BUS 211 Office Machines

2 2 3

Instructions in the operation of the bookkeeping-accounting machines, duplicating equipment, and the dictating and transcribing machines. Prerequisite: T-BUS 110.

T-EDP 104 Introduction to Data Processing Systems

3 2 4

Fundamental concepts and operational principles of data processing systems, as an aid developing a basic knowledge of computers, prerequisite to the detail study of particular computer problems. This course is a prerequisite for all programming courses. Prerequisite: None.

FIFTH QUARTER**T-ENG 206 Business Communication**

3 0 3

Develops skills in techniques in writing business communications. Emphasis is placed on writing action—getting sales letters and prospectuses. Business reports, summaries of business conferences, letters involving credit, collections, adjustments, complaints, orders, acknowledgements, remittances, and inquiry. Prerequisite: T-ENG 102.

T-BUS 207E—Dictation and Transcription (Executive)

3 2 4

Covering materials appropriate to the course of study; the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices. Minimum dictation rate of 110 words per minute required for five minutes on new material. Prerequisite: T-BUS 206E.

T-BUS 214 Secretarial Procedures

3 2 4

Designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These include the following: receptionist duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization, and insurance claims.

Prerequisite: None.

T-PSY 112 Personality Development

3 0 3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement. Prerequisite: None.

SIXTH QUARTER**T-SSC 205 American Institutions**

3 0 3

A study of the effect of American social, economic, and political institutions upon the individual as a citizen and as a worker. The course dwells upon current local, national, and global problems viewed in the light of our political and economic heritage. Prerequisite: None.

T-BUS 208E Dictation and Transcription (Executive) 3 2 4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. Minimum dictation rate of 120 words per minute required for five minutes on new material. Prerequisite: T-BUS 207E.

T-BUS 271 Office Management 3 0 3

Presents the fundamental principles of office management. Emphasis on the role of office management including its functions, office automation, planning, controlling, organizing and actuating office problems. Prerequisite: None.

MANUFACTURING ENGINEERING TECHNOLOGY

This field is perhaps one of the most promising ones that a student with an interest in science and mechanics may enter in our modern technical world. The demand for trained technical people has exceeded the supply for many years and gives every indication of continuing this trend. This two year program prepares the student for employment as an Engineering Assistant in such fields as Quality Control, Plant Layout, Methods and Time Study, Metallurgy, Technical Sales, or Management. Job opportunities exist in industry, Civil Service, Military Service, Insurance (Safety) and the Consulting fields.

DESCRIPTION OF THE PROGRAM

The Mechanical Engineering Technology program of Forsyth Technical Institute combines both academic courses and also laboratory and shop practice. An extensive machine shop, a well equipped material testing laboratory, as well as chemical and physics laboratories insure that actual job techniques will be practiced and learned. In the first year's work many basic science and math courses as well as machine shop laboratories will fill the students' time. The last year's work is devoted to more intensive specialization in the field of Manufacturing Engineering Technology. Such courses as Metallurgy, Strength of Material, Statics, Machine Processes, Plant Layout, and Quality Control are studied in depth. A complete description of the courses required for graduation and the awarding of the Associate of Applied Science Degree is given below.

CURRICULUM BY QUARTERS

Course Title	Hours Per Week		Quarter Hours Credit
	Class	Lab.	
FIRST QUARTER			
T-MAT 101 Technical Mathematics	5	0	5
T-ENG 101 Grammar	3	0	3
T-PHY 101 Physics: Properties of Matter	3	2	4
T-DFT 101 Technical Drafting	2	6	4
T-MEC 101 Machine Processes	0	6	2
	—	—	—
	13	14	18
SECOND QUARTER			
T-ENG 102 Composition	3	0	3
T-MAT 102 Technical Mathematics	5	0	5
T-PHY 102 Physics: Work, Energy, Power	3	2	4
T-DFT 102 Technical Drafting	2	6	4
T-MEC 102 Machine Processes	0	6	2
	—	—	—
	11	14	16

Course Title	Hours Per Week		Quarter Hours
	Class	Lab.	Credit
THIRD QUARTER			
T-ENG 103 Report Writing	3	0	3
T-MAT 103 Technical Mathematics	5	0	5
T-PHY 103 Physics: Electricity	3	2	4
T-PHY 106 Applied Mechanics	5	0	5
T-MEC 103 Machine Processes	0	6	2
	—	—	—
	16	8	19
FOURTH QUARTER			
T-ENG 204 Oral Communication	3	0	3
T-MEC 205 Strength of Materials	3	2	4
T-MEC 210 Physical Metallurgy	3	3	4
T-ELN 201 Industrial Controls	3	2	4
T-MEC 201 Machine Processes	2	6	4
	—	—	—
	14	13	19
FIFTH QUARTER			
T-ECO 102 Economics	3	0	3
T-MEC 211 Physical Metallurgy	3	3	4
T-MEC 235 Hydraulics and Pneumatics	3	3	4
T-ISC 202 Quality Control	3	2	4
T-DFT 211 Mechanisms	3	2	4
	—	—	—
	15	10	19
SIXTH QUARTER			
T-PSY 206 Applied Psychology	3	0	3
T-ISC 203 Motion and Time Study	3	2	4
T-ISC 209 Plant Layout	3	2	4
T-ISC 201 Industrial Organization and Management	3	0	3
T-MEC 213 Production Planning	3	3	4
	—	—	—
	15	7	18

COURSE DESCRIPTIONS

Course Title	Hours Per Week		Quarter Hours
	Class	Lab.	Credit
FIRST QUARTER			
T-ENG 101 Grammar	3	0	3
Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.			
T-MAT 101 Technical Mathematics	5	0	5
The real number system is developed as an extension of natural numbers. Number systems of various bases are introduced. Fundamental algebraic operations, the rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed. Prerequisite: Satisfactory evidence that admission requirements have been met.			
T-PHY 101 Physics: Properties of Matter	3	2	4
A fundamental course covering several basic principles of physics. The divisions			

included are solids and their characteristics, liquids at rest and in motion, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course.

T-DFT 101 **Technical Drafting** **2** **6** **4**

The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced.

T-MEC 101 Machine Processes 0 6 2

An introductory course designed to acquaint the student with basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring, and reaming.

SECOND QUARTER

T-ENG 102 Composition 3 0 3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition. Prerequisite: T-ENG 101.

T-MAT 102 Technical Mathematics 5 0 5

A continuation of T-MAT 101. Advanced algebraic and trigonometric topics including quadratics, logarithms, determinants, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions are studied in depth. Prerequisite: T-MAT 101.

T-PHY 102 Physics: Work, Energy, Power 3 2 4

Major areas covered in this course are work, energy, and power. Instruction includes such topics as statics, forces, center of gravity and dynamics. Units of measurement and their applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas. Prerequisites: T-MAT 101, T-PHY 101.

T-DFT 102 Technical Drafting 2 6 4

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphical analysis of space problems. Problems of practical design elements involving points, lines, planes and a combination of these elements shall be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and development of various types of geometrical objects. Prerequisite: T-DFT 101.

T-MEC 102 Machine Processes 0 6 2

Advanced operations on lathe, drilling, boring and reaming machines. Milling machine theory and practice. Thorough study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed. Prerequisite: T-MEC 101.

THIRD QUARTER

T-ENG 103 Report Writing

3 0 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: T-ENG 102.

T-MAT 103 Technical Mathematics

5 0 5

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Applications of these concepts to practical situations are stressed. Prerequisite: T-MAT 102.

T-PHY 103 Physics: Electricity

3 2 4

Basic theories of electricity, types of electricity, methods of production, and transmission and transforming of electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magnetism, induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course. Prerequisites: T-PHY 101, T-MAT 101.

T-PHY 106 Applied Mechanics

5 0 5

Concepts and principles of statics and dynamics. Parallel concurrent and nonconcurrent force systems in coplanar and noncoplanar situations. Concepts of centroids and center of gravity, moments of inertia, fundamentals of kinetics, and kinematics of velocity and motion. Prerequisites: T-MAT 102, T-PHY 102.

T-MEC 103 Machine Processes

0 6 2

Modern machine tools of industry. Theory and practice with shaper, slotter, planer, turret lathe, screw machine, grinding and finishing machines, Gear design and the processes of gear manufacturing. Prerequisite: T-MEC 102.

FOURTH QUARTER

T-ENG 204 Oral Communication

3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews. Prerequisite: T-ENG 101.

T-MEC 205 Strength of Materials

3 2 4

Study of principles and analysis of stresses which occur within machine and structure elements subjected to various types of loads such as static, impact, varying and dynamic. Analyses of these stresses are made as applied to thin-walled cylinders and spheres, riveted and welded joints, beams, columns and machine components. Prerequisites: T-PHY 106, T-MAT 102.

T-MEC 210 Physical Metallurgy

3 3 4

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, and nuclear reactions. Solid (crystalline) structures, methods of designating crystal planes, liquid and vapor phases, phase diagrams, and alloy systems. Prerequisite: T-PHY 101.

T-ELN 201 Industrial Controls 3 2 4

Industrial controls is the study of modern methods of controlling machinery by electronic circuitry. Machinery controls and electronic mechanisms that automatically operate machines will be studied. Types of motors, generators, control signals and devices, thyratrons, gates, switches, and servomechanisms circuits are major areas of study. Prerequisite: T-PHY 103.

T-MEC 201 Machine Processes 2 6 4

Newer concepts of work handling and automatic machining process. Chipless production and new techniques in metal forming. Analysis of high-energy forming, ultrasonic machining, electrolytic metal removal, chemical milling, numerical controls and simplified building block numerical control systems. Prerequisite: T-MEC 103.

FIFTH QUARTER

T-ECO 102 Economics 3 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Prerequisite: None.

T-MEC 211 Physical Metallurgy 3 3 4

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bonding and homogenization, recrystallization and grain growth, age hardening, nitriding, internal oxidation, heat treatment of steel, laboratory experiments and demonstrations. Prerequisite: T-MEC 210.

T-MEC 235 Hydraulics and Pneumatics 3 3 4

The basic theories of hydraulic and pneumatic systems. Combinations of systems in various circuits. Basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs. Prerequisites: T-MAT 102, T-PHY 101.

T-ISCI 202 Quality Control 3 2 4

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structures, costs, reports records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance.

T-DFT 211 Mechanisms 3 2 4

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkages, velocities and acceleration of points within a link mechanism, layout methods for designing cams, belts, pulleys, gears, and gear trains. Prerequisites: T-MAT 102, T-DFT 102.

SIXTH QUARTER

T-PSY 206 Applied Psychology 3 0 3

A study of the principles of psychology that will be of assistance in the understanding of inter-personal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are: employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

T-ISC 203 Motion and Time Study 3 2 4

Types of methods studies and their applications. Process charts, analysis sheets, time study, work simplification, skill and effort rating.

T-ISC 209 Plant Layout 3 2 4

A practical study of factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money and materials in a manufacturing operation. Prerequisites: T-MEC 201, T-DFT 102.

T-ISC 201 Industrial Organization and Management 3 0 3

Organizational structure for industrial management, operational and financial activities, including accounting, budgeting, banking, credit and industrial risk, forecasting of markets, selection and layout of physical facilities, selection, training and supervision of personnel as found in typical industrial organizations.

T-MEC 213 Production Planning 3 3 4

Day-to-day plant direction; forecasting, product planning and control, scheduling, dispatching, routing, and inventory control. Case histories are discussed in the classroom, and courses of corrective action are developed. Drafting room layouts for planning and control. Prerequisite: T-DFT 102. Corequisite: T-MEC 201.

PRINTING TECHNOLOGY - MANAGEMENT

The graphic arts industry is large and varied and provides excellent opportunities for the individual with ability and training. Depending on the size of the organization, the technician may work directly with management or with skilled craftsmen, or he may function as a liaison between them.

A printing management technician performs many of the planning and supervisory tasks necessary in this field. He is involved in the handling of customer inquiries, the tools and instruments concerned with specific functions such as estimating; cost, production, inventory, scheduling and control; and that part of front office work not performed specifically by accounting, sales, finance, and related professionals. He knows how to order printing production supplies; he is able to measure and scale copy; he knows the production capacity and operation of plant machinery; and he can use the various tables, charts, and devices used for calculating time factors and production costs for a variety of printing jobs.

DESCRIPTION OF PROGRAM

The program of instruction at Forsyth Technical Institute includes both classroom and laboratory experiences with practical application to the graphic arts industry. In addition, field trips, speakers, and movies add to and enrich the already well-rounded program provided by well-qualified instructors with modern equipment.

CURRICULUM BY QUARTERS

Course Title	Hours Per Week		Quarter Hours
	Class	Lab.	Credit
FIRST QUARTER			
T-ENG 101 Grammar	3	0	3
T-BUS 101 Introduction to Business	5	0	5
T-PRN 101 Printing Processes	2	2	3
T-PRN 102 Layout and Design	2	2	3
T-PRN 103 Principles of Typography	2	2	3
	—	—	—
	14	6	17
SECOND QUARTER			
T-ENG 102 Composition	3	0	3
T-MAT 110 Business Mathematics	5	0	5
T-PRN 106 Letterpress Printing	2	6	4
T-PRN 105 Copy Preparation I	3	3	4
T-PRN 107 Camera I	3	3	4
	—	—	—
	16	12	20

Course Title		Hours Per Week	Quarter Hours	Credit
		Class	Lab.	
THIRD QUARTER				
T-ENG 103	Report Writing	3	0	3
T-BUS 120	Accounting I	5	2	6
T-PRN 104	Paper Technology	2	0	2
T-PRN 215	Copy Preparation II	2	2	3
T-PRN 208	Offset Stripping and Plate Making	2	2	3
		—	—	—
		14	6	17
FOURTH QUARTER				
T-ENG 204	Oral Communication	3	0	3
T-BUS 266	Budget and Record Keeping	3	0	3
T-BUS 115	Business Law I	3	0	3
T-PRN 210	Estimating I	3	2	4
T-PRN 209	Lithography	3	6	6
		—	—	—
		15	8	19
FIFTH QUARTER				
T-SSC 201	Social Science I	3	0	3
T-BUS 272	Principles of Supervision	3	0	3
T-BUS 110	Office Machines	2	2	3
T-PRN 213	Estimating II	3	2	4
T-PRN 211	Production Planning	3	2	4
		—	—	—
		14	6	17
SIXTH QUARTER				
T-SSC 202	Social Science II	3	0	3
T-BUS 232	Sales Development	3	0	3
T-PRN 212	Plant Management	3	2	4
T-PRN 214	Printing Production Lab	5	6	8
		—	—	—
		14	8	18

COURSE DESCRIPTIONS

Course Title		Hours Per Week	Quarter Hours	Credit
		Class	Lab.	
FIRST QUARTER				
T-ENG 101	Grammar	3	0	3
Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-day-to situations in industry and social life. Prerequisite: None.				
T-BUS 101	Introduction to Business	5	0	5
A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management. Prerequisite: None.				

T-PRN 101 Printing Processes 2 2 3

An introduction to the printing processes incorporated in lithography, mitography, xerography, gravure and letterpress with emphasis on the study of the equipment, plates, inks, paper and the advantages of each process. Prerequisite: None.

T-PRN 102 Layout and Design 2 2 3

A study of the elements in layout and design, including the principles of balance, proportion, harmony, contrast and color in printed matter. An evaluation of designs used for advertisements, business forms, stationery, books, posters and brochures will be emphasized. Instruction will include thumbnail sketches, roughs, comprehensives, affinity of type faces, and marking copy in the preparation of dummies in both conventional and modern design. Prerequisite: None.

T-PRN 103 Principles of Typography 2 2 3

A brief history and function of type, kinds of type, and type identification, point sizes, foundry, monotype, linotype, ludlow, and photo composition. Mathematics of copy fitting and proper selection of type based on analysis of visibility, readability and legibility. Prerequisite: None.

SECOND QUARTER

T-ENG 102 Composition 3 0 3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition. Prerequisite: T-ENG 101.

T-MAT 110 Business Mathematics 5 0 5

This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business.

T-PRN 106 Letterpress Printing 2 6 4

Practice and theory, including the principles of imposition, lockup of single and multiple page forms, press make-ready, register, die cutting, numbering, perforations and specialized processes. Prerequisites: T-PRN 102, T-PRN 103.

T-PRN 105 Copy Preparation I 3 3 4

Planning, visualizing and designing copy for photographic reproduction. The use of roughs, comprehensives, thumbnails, mechanicals, paste-ups, photostats, mechanical screens, veloxes, photography, reductions and enlargements of copy, color separation (in-plant and out-of-plant) and imposition. Prerequisites T-PRN 102, T-PRN 103.

T-PRN 107 Camera I 3 3 4

Theory and practice of camera operation for line and halftone and color operation. Selection and handling of materials, development, reductions and enlargements, illumination and the use of screens and filters will be introduced. Prerequisites: T-PRN 102, T-PRN 103.

THIRD QUARTER

T-ENG 103 Report Writing 3 0 3
The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum. Prerequisite: T-ENG 102.

T-BUS 120 Accounting I 5 2 6

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: T-MAT 110.

T-PRN 104 Paper Technology 2 0 2

A study of paper and papermaking (manufacturing and converting) with reference to classifications, sizes, weights, purchasing and special characteristics. Time will be given to study the problems involved in selecting the right paper for the various printing processes. Use of paper catalogs and sample books will be stressed.

T-PRN 215 Copy Preparation II 2 2 3

Continuation of T-PRN Copy Preparation I.

T-PRN 208 Offset Stripping and Plate Making 2 2 3

Arrangements of negatives or positives in the form of flats from which press plates are to be made. Examination and treatment of negatives to remove defects by opaquing and retouching. Fundamental principles of platemaking by photo-mechanical means, including surface, wipe-on, deep etch, presensitized, multi-metal plates, paper and plastic. Prerequisites: T-PRN 105, T-PRN 107.

FOURTH QUARTER

T-ENG 204 Oral Communication 3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews. Prerequisite: T-ENG 101.

T-BUS 266 Budget and Record Keeping 3 0 3

The basic principles, methods, and procedures for preparation and operation of budgets. Special attention is given to the involvement of individual departments and the role they play. Emphasis on the necessity for accurate record keeping in order to evaluate the effectiveness of budget planning. Prerequisite: T-BUS 121.

T-BUS 115 Business Law I

3 0 3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies. Prerequisite: None.

T-PRN 210 Estimating I

3 2 4

Instruction covers the function of estimating; also detailed practice in estimating time, labor and materials, according to the P.I.A. Instruction Manual and Hoch's Estimating Standards for Printers. Instruction, demonstrations, work practice in the proper use of the Franklin Catalog (letterpress).

T-PRN 209 Lithography

3 6 6

Practice and theory of offset press work, including the operation of duplicating machines (Multilith and Davidson), the Harris and Chief printing presses. Instruction will include setting up, ink and water balance and register. Prerequisite: T-PRN 208.

FIFTH QUARTER**T-SSC 201 Social Science I**

3 0 3

An integrated course in the social sciences, drawing from the fields of anthropology, psychology, history, and sociology. Prerequisite: None.

T-BUS 272 Principles of Supervision

3 0 3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed. Prerequisite: None.

T-BUS 110 Office Machines

2 2 3

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines, and calculator. Prerequisite: None.

T-PRN 213 Estimating II

3 2 4

Instruction covers the lithographic phases of the printing plant. Pricing and charging for camera negatives, stripping, plates, paper ink, press run, copy preparation and finishing operations. Instruction, demonstrations and work practice in the proper use of the Franklin Catalog (offset), Cost and Production Tables—Offset and Duplicating Lithography by Hoch, and Estimating Lithography by Piper. Prerequisite: T-PRN 210.

A study of printing production planning and control techniques. Emphasis is placed on a practical approach to the use of records as the job progresses through the shop. Instruction includes the part estimating plays in production, principles and application of production forecasting, producing order, routing and planning, scheduling, dispatching, records of production, inspection and quality control and materials handling. Prerequisites: T-PRN 101, T-PRN 209, T-PRN 215.

SIXTH QUARTER

Continuation of T-SSC 201, Social Science I: A study of social sciences with emphasis on economics, political science, and social problems as they relate to the individual. Prerequisite: T-SSC 201.

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required. Prerequisite: None.

A study of printing production management and its supporting activities as applied to the printing industry. Instruction includes the structure of the industry, specialization and standardization, organization, plant location and layout, personnel management, industrial engineering organization, operation analysis, time study, personnel and taxes. Prerequisite: None.

A laboratory course providing opportunity for students to work on practical problems in the production of literature and advertising. Emphasis will be placed on producing a printed piece as a group project.

FORSYTH TECHNICAL INSTITUTE

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